2017

Sedan and Utility

POLICE
INTERCEPTOR
TO PROTECT AND TO SERVE
POLICE
INTERCEPTOR
TO PROTECT AND TO SERVE
001

Police Modifier Guide

Table of Contents

Contents **PAGE**

Introduction 0-2

Introduction

Introduction

Ford Motor Company has assembled this Police Interceptor Modifier Guide to assist vehicle modifiers in producing safe and quality products. Ford believes that safety and quality come first. To achieve customer satisfaction, we want to assist modifiers in achieving the highest standards of safety and quality in their products.

This book is divided into topics pertinent to modifiers of police vehicles. Reference is made to the current Explorer and Taurus Workshop Manual for appropriate service procedures, torque specifications, component separation clearances and other standard information which is common with the unmodified vehicle. Specifications which are unique to the guide are designated.

This modifier guide is not a "how-to" book; it should be used as a checklist to help make sure that certain important steps in the modification process are considered. While Ford is providing this information to assist modifiers, it does not warrant the products, methods, materials or the workmanship of the modifier. Nor does it warrant against failures that result from the modification of a vehicle.

Following the guidelines contained in this guide it does not assure individual modifiers that the products they modify comply with U.S. Federal or Canadian Motor Vehicle Safety Standards in effect at the time of the modification. The guidelines set forth are based on engineering analyses of typical police vehicles. If followed, the modifier's efforts in certifying vehicles to applicable standards should be aided. Compliance testing that may be required for certification of specific vehicle configurations or construction is, however, the sole responsibility of the individual modifier.

The only model suitable for use in police service is the pursuit-rated Police Interceptor.

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Table of Contents

Contents **PAGE**

Section 1: General Information 1-2
  Important Safety Notice 1-2
  Police Vehicle Definition 1-2
  Identification Codes 1-9
  Good Practices 1-15
  New Vehicle Storage 1-16
  Front Ride Height Measurement 1-17
  Rear Ride Height Measurement 1-18
  Tire Pressure Monitoring System (TPMS) Principles of Operation 1-20
  Ambient Temperature Change and Tire Pressure 1-20

Section 1: General Information

Section 1: General Information

Important Safety Notice

NOTE:

The descriptions and specifications contained in this guide were in effect at the time this manual was approved for printing. Ford Motor Company reserves the right to discontinue models at any time, or change specifications or design without notice and without incurring obligation.

Appropriate repair methods and procedures are essential for the safe, reliable operation of all motor vehicles as well as the personal safety of the individual doing the work. This manual provides general directions and guidelines for performing modifications to the Police Interceptor. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools and parts for modifying vehicles, as well as in the skill of the individual doing the work. This manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this manual must first establish that he or she compromises neither his or her personal safety nor the vehicle integrity by his or her choice of methods, tools or parts.

Notes, Notices and Warnings

As you read through this guide, you will come across NOTES, NOTICES and WARNINGS. Each one is there for a specific purpose. NOTES give you added information that will help you to complete a particular procedure. NOTICES are given to prevent you from making an error that could damage the vehicle. WARNINGS remind you to be especially careful in those areas where carelessness can cause you personal injury. The following list contains some general warnings that you should follow when you work on a vehicle.

⚠ **WARNING:**

- **Always wear safety glasses for eye protection.**
- **Use safety stands whenever a procedure requires you to be under the vehicle.**
- **Make sure that the ignition switch is always in the OFF position, unless otherwise required by the procedure.**
- **Set the parking brake when working on the vehicle. The gear selector should be set in PARK unless instructed otherwise for a specific operation. Place wood blocks (4 inch x 4 inch or larger) against the front and rear surfaces of the tires to help prevent the vehicle from moving.**
- **Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide poisoning.**
- **Keep yourself and your clothing away from moving parts when the engine is running, especially the drive belts.**
- **To reduce the risk of serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tailpipe, catalytic converter and muffler.**
- **Do not smoke while working on a vehicle.**
- **To reduce the risk of injury, always remove rings, watches, loose hanging jewelry and loose clothing before beginning to work on a vehicle.**
- **When it is necessary to work under the hood, keep hands and other objects clear of the radiator fan blades and belts.**
- **Failure to follow these instructions may result in personal injury.**

Making Safety Devices and Elements Inoperative

The vehicle contains many safety features required by Federal or Canadian Motor Vehicle Safety Standards. These features, which include the key-in-ignition chime and brake lights, should never be disabled or modified.

CFR 49 Section 30122 states that "A manufacturer, distributor, dealer or motor vehicle repair business may not knowingly make inoperative any part of a device or element of design installed on or in a motor vehicle or motor vehicle equipment in compliance with an applicable motor vehicle safety standard prescribed under this chapter unless the manufacturer, distributor, dealer or repair business reasonably believes the vehicle or equipment will not be used (except for testing or a similar purpose during maintenance or repair) when the device or element is inoperative."

Police Vehicle Definition

The Police Interceptor vehicle is put through twice as many cycles of Ford's standard vehicle durability tests to make sure it meets the rigors of police usage. This vehicle testing is in addition to substantial component durability testing. This extra testing for the Police Interceptor certifies to Ford the entire vehicle is "heavy-duty" and suitable for police usage.

Section 1: General Information

Sedan Standard Equipment — Exterior

Item	Description
Antenna	Roof mount - rear center of roof
Bumpers	Concealed with one-piece full wrap cover, body color
Decklid	Key cylinder lock and instrument panel push button
Door Handles	Painted black
Front Door Locks	Key cylinders (Front Driver/Passenger Doors)
Easy Fuel Capless Fuel-Filler	Easy Fuel Capless fuel-filler system has an integrated spring-loaded flapper door that allows customers to simply insert the fuel nozzle into the tank to fill up no screw cap is required
Headlamps	Projector halogen
Mirrors	Black Caps (Molded in Color - MIC), power electric remote, manual folding with integrated blind spot mirrors (integrated blind spot mirrors not included when equipped with BLISR®)
Nameplate Badge	Police Interceptor and Road Leaf FFV Badge
Paint	Clear coat Anti-chip paint primer Body color B-pillars
Tail Lamps	Halogen with Halogen Decklid Lamps
Tires	245/55R18 A/S BSW (includes Full Size Spare)
Wheel/Rims	Wheels – 18 inch x 8 inch (Painted E-coat with Black Top Coat) Steel and vented with Wheel Hub Cover (includes spare) - Full Size Spare Tire P245/55R18 A/S BSW 18 inch Conventional Steel Spare Wheel
Underbody	Deflector plate - Undercarriage deflector plates protect the underbody, powertrain and chassis components

Standard Equipment — Interior

Item	Description
Climate Control	Single Zone Manual
Console Mounting Plate	Steel between front driver/passenger seats along driveline tunnel
Door Locks	Power, Rear Door Handles and Locks Operable
Pedals	Power Adjustable
Flooring	Heavy-Duty Vinyl
Fuse Panel	Easy access, labeled
Powerpoints	2 located in I/P lower close-out
Glove Compartment	Illuminated, large bin, lockable with dampened glove compartment door, zippered owner's pouch with embossed car-line logo
Headliner	Removable with high intensity dome lamp (includes 5-inch round map light mounted behind rear view mirror)
Head Restraints	Two way
Instrument Panel	With side window de-misters
Lamps	Dome and luggage compartment
Luggage Compartment Trim	Full carpet
Map Pockets	Integral front door
Mirror	Day/night inside rear view
Radio Speakers	Front speakers are mounted in the door. Rear speakers mounted in rear deck.

Section 1: General Information

Standard Equipment — Interior

(Continued)

Item	Description
Personal Safety System With Dual Stage Airbags	Driver and right front passenger (includes safety belt pretensioners, dual stage airbags, seat position and weight sensors)
Safety Belts	Three-point active for front and rear outboard occupants (safety belt pretensioners on front seat shoulder belts)
Rear Passenger Doors	2nd row doors open extra wide. Door panels simplified with no cup holders or pockets for ease of cleaning
Scuff Plates	Color-keyed front and rear doors
Seats	1st Row Heavy-Duty Cloth Bucket - 6-way power driver (manual recline, manual lumbar with 2-way manual passenger (manual recline, no lumbar) - Built-in composite intrusion plates in both front seatbacks - 2nd Row Vinyl Bench - 2nd Row Door-Panels – simplified, no pockets or door speakers
Storage	Overhead console with dome/map lights and sunglass holder
Sun Visors	Non-illuminated driver/passenger
Steering Wheel	Manual/Tilt, Urethane Wrapped with Speed Controls Audio Controls
Trip Odometer	—
Trunk	Deep well, carpeted
Shifter	Column mounted
Speedometer	Digital certified
Universal Equipment Tray	Tray mounted at top center of instrument panel (mounting of radar, video, and other police equipment)
Windows	Power, 1-touch Up/Down Driver Side Window Disable Lock – 2nd Row Only - Power Rear Windows Driver Switch Only
Work Task Light	Red, White 1st Row overhead

Standard Equipment — Functional Sedan Interceptor

Item	Description
Air Conditioning	Manual with positive shutoff registers Wide Open Throttle (WOT) shut off
Generator	220A maximum output.
Battery	Heavy-duty maintenance free 78A / 750CCA
Brakes	4-wheel heavy-duty disc with heavy-duty front and rear calipers
Antenna, Radio	Integral to the rear window glass
Battery Saver	Turns off lights after 30 minutes
Brake Shift Interlock Protection	Brake pedal must be pressed to move shift lever out of park position and engage the transmission.
Child Safety Latches on Rear Doors	
Coolant Recovery System	
Decklid Release	A switch located on the center instrument panel, with an additional optional switch on the door panel. The switch located on the instrument panel can be configured to work at all times or only with the ignition key in the ON position, depending on the customer preference.
Defroster, Rear Window	Electric
Disc Brakes	4-wheel heavy-duty disc with heavy-duty front and rear calipers
Drive Shaft	Aluminum
Engine	3.5L V6 Ti-VCT Sedan

Section 1: General Information

Standard Equipment — Functional Sedan Interceptor

(Continued)

Item	Description
Engine Idle Meter	The engine idle meter records how long the vehicle engine runs while in PARK or NEUTRAL. This information can be combined with the vehicle mileage to determine when an engine oil change is required hour of engine idle time = 33 miles driving distance
Engine Oil Cooler	
Exhaust System	Dual – Quasi
Fail Safe Cooling	
Fan	Dual electric
Spare Tire	Full size spare tire and wheel
Front Stabilizer Bar	
Front Suspension	Heavy-duty
Fuel Filler Cap	No fuel cap
Fuel Tank	19 gallon
Glass	Solar tinted, full
Headlamps	Halogen with on reminder chime
Heat Ducts	Front and rear floor mounted
Frame, Steering Gear/Rack And Pinion, Body Mounts And Suspension	Heavy-duty
Hood Assists	Gas cylinder, monotube
Horn	Dual note
Ignition System	Electronic distributorless
Jack	Scissor
Parking Brake	Single stroke, manual release
Parking Brake Release	Manual
Passenger Capacity	Five
Simple Fleet Key	Key without microchip, reduce cost for replacement
Power and Signal Distribution Vehicle Signals	• Vehicle Speed • Driver Door Ajar • Park Detect
New Upfitter Dash Panel Pass Through	• 4 Twisted Wire Pairs (20 AWG) • 2 Twisted Wire Pairs (14 AWG)
14-Way Connector	• B+ Feed 1 (20 Amps) • B+ Feed 2 (20 Amps) • B+ Feed 3 (15 Amps) • Run/Start Feed #1 (20 Amps) • Run/Start Feed #2 (20 Amps) • Battery Saver/Accessory Delay (15 Amps) • Start Feed (2.5 Amps)
6-Way Connector	• Three 40 Amp fused circuits w/grounds
14-Way Connector	• Front Wig-Wag Power • Front LH/RH Corner LED Lights • Front Flasher Module Power • Front LH/RH Corner LED Lights SYNC • Brake Output (5 Amp) • Grille Lamp Power • Front LH/RH Corner LED Lights Pattern
Power Steering	Electric Power Assist (EPAS)

Section 1: General Information

Standard Equipment — Functional Sedan Interceptor

(Continued)

Item	Description
Power Steering Oil Cooler	Integral with transmission oil cooler
Rear Stabilizer Bar	
Rear Suspension	Independent
Shock Absorbers	Monotube
MyFord	Police Cluster - AM/FM / CD / MP3 Capable / Clock / 4 speakers 4.2 inch Color LCD Screen Center Stack "Smart Display" 5-way Steering Wheel Switches Redundant Controls
Speedometer	160 mph certified calibration in 2 MPH increments
Tachometer	
Tether Straps	Both front driver and passenger doors
Tires	P235/55R17 98W — All-season BSW Goodyear Eagle RSA
Transmission	Electronically controlled six-speed automatic overdrive with final drive ratio of: 3.39:1 for AWD
Transmission Oil Cooler	Dedicated
Upper Ball Joints	Low friction, non-greaseable
Voltage Regulator	Electronic, integral to generator
Wheel Rims	Heavy-duty steel (17 in x 7.5 in)
Windows	Power with express-down driver window
Windshield Washers	Dual jet
Windshield Wipers	Intermittent fixed interval

Standard Equipment - Utility Police Interceptor - Exterior

Item	Description
Antenna	Roof Mount rear center of roof
Bumpers	Concealed with one-piece full wrap cover, body color
Cladding	Lower bodyside cladding (Black)
Door Handles	Black (MIC)
Front Door Locks	Key cylinders (Front Driver/Passenger Doors)
Capless Fuel-Filler	The Easy Fuel capless fuel-filler system has an integrated spring-loaded flapper door that allows customers to simply insert the fuel nozzle into the tank to fill up no screw cap is required
Headlamps	Projector halogen
Liftgate	Manual 1 piece fixed glass with door lock cylinder
Mirrors	Black Caps (MICE), Power Electric Remote, Manual Folding with Integrated Blind Spot Mirrors (integrated blind spot mirrors not included when equipped with BLIS)
Nameplate Badge	Police Interceptor and Road Leaf FFV Badge
Spoiler	Painted black
Tail Lamps	LED
Tires	245/55R18 A/S BSW
Wheel / Rims	Wheels – 18 inch x 8 inch Painted Black Steel and vented with Wheel Hub Cover (includes spare)
Wheel Lip Molding	Black (MIC)
Climate Control	Single Zone Manual

Section 1: General Information

Standard Equipment - Utility Police Interceptor - Exterior

(Continued)

Item	Description
Console Mounting Plate	Steel between front driver/passenger seats along driveline tunnel
Door Locks	Power Rear Door Handles and Locks Operable
Flooring	Heavy-Duty Vinyl
Pedals	Power Adjustable
Powerpoints	2 located in I/P lower close-out; 1 in rear cargo area
Scuff Plates	Front and Rear
Seats	1st Row Heavy-Duty Cloth Bucket - 6-way power driver (manual recline, manual lumbar with 2-way manual passenger (manual recline, no lumbar) - Built-in composite intrusion plates in both front seat backs - 2nd Row Vinyl, 60/40 split bench - 2nd Row Door-Panels – simplified, no pockets
Shifter	Column mounted
Speedometer	Digital Certified
Steering Wheel	Manual/Tilt, Urethane Wrapped with Speed Controls / Audio Controls
Storage	Overhead Console with dome/map lights
Sun Visors	Non-Illuminated Driver/Passenger
Trunk	Flat Load Floor with living hinge for access below
Universal Equipment Tray	Tray mounted at top center of instrument panel (mounting of radar, video, and other police equipment)
Windows	Power, one touch Down Driver Side - Window Disable Lock – 2nd Row Only - Power Rear Windows Driver Switch Only
Work Task Light	Red/White 1st Row Overhead

Standard Equipment - Utility Police Interceptor

Item	Description
Alternator	220 Amp
Battery	Heavy-duty maintenance free 78A / 750CCA
Brakes	4-wheel heavy-duty disc w/ heavy-duty front and rear calipers
Defroster, Rear Window	Electric
Drive Shaft (AWD)	Aluminum
Easy Fuel® Capless Fuel-Filler	The Easy Fuel® capless fuel-filler system has an integrated spring-loaded flapper door that allows customers to simply insert the fuel nozzle into the tank to fill up, no screw cap and tether is required.
Engine	3.7L V6 Ti-VCT
Engine Idle Meter	The engine idle meter records how long the vehicle engine runs while in PARK or NEUTRAL. This information can be combined with the vehicle mileage to determine when an engine oil change is required. 1 hour of engine idle time = 33 miles driving distance
Engine Oil Cooler	
Exhaust System	Stainless steel, true dual
Fail Safe Cooling	
Fan	Dual electric, PCM controlled
Front Stabilizer Bar	
Front Suspension	
Fuel Tank	18.6 gallon
Glass	Solar tinted, full windshield and front doors. Privacy glass 2nd and 3rd row

Section 1: General Information

Standard Equipment - Utility Police Interceptor

(Continued)

Item	Description
Frame, Steering Gear/Rack and Pinion, Body Mounts and Suspension	Heavy-duty
Hood Assists	Gas cylinder, monotube
Horn	Dual note
Ignition System	Electronic distributorless
Jack	Scissor

Section 1: General Information - Sedan/Utility Police Interceptor

Item	Description
MyFord	Police Cluster - AM/FM / CD / MP3 Capable / Clock / 6-speakers - 4.2 inch Color LCD Screen Center-Stack Smart Display 5-Way Steering Wheel Switches, Redundant Controls
Parking Brake	Single stroke, manual release
Passenger Capacity	Five
Plastic Head Ignition Key	Primary only
Power Distribution Center	Two (50A) battery fused circuits One (15A) battery fused circuits Two (20A) RUN/ACC fused circuits Three (40A) RUN/ACC fused circuits Vehicle signals: Hazard in and Hazard out Hazard in Hazard out Battery saver Vehicle speed sensor Vehicle start
Power Pigtail Harness	(3) 40 Amp fused at bottom of center stack and floor console interface
Power Steering	Electric Power Assist (EPAS)
Rear Stabilizer Bar	-
Rear Suspension	Independent
Recovery Hooks	Front mounted
Shock Absorbers	Nitrogen pressurized, monotube
Simple Fleet Key	Simple Fleet Key (without microchip, easy to replace)
Speedometer	160 MPH certified calibration in 2 MPH increments
Tachometer	
Tether Straps	Both front driver and passenger doors
Transmission	Electronically controlled six-speed automatic overdrive (with final drive ratio of: 3.65:1 for AWD
Transmission Oil Cooler	Dedicated
Two-way Radio Pre-Wire	Wiring provided in floor console between front driver/passenger seats
Upper Ball Joints	Low friction, non-greaseable
Voltage Regulator	Electronic, integral to generator
Windshield Washers	Dual jet
Windshield Wipers	Front speed sensitive intermittent; rear
Electronic Stability Control	Advance Trac® with Electronic Stability Control (ESC) with Hydraulic Brake Assist
Airbags	2nd generation driver and front-passenger front airbags, steering wheel and passenger side I/P - side-impact airbag, external side of front driver/passenger seat back deployment - and safety canopy
Anti-Lock Brakes (ABS) with Traction Control	ABS brake modulation with traction control individual wheel brake application
Battery Saver Feature	Disconnect battery power 30 minutes after key off event

Section 1: General Information

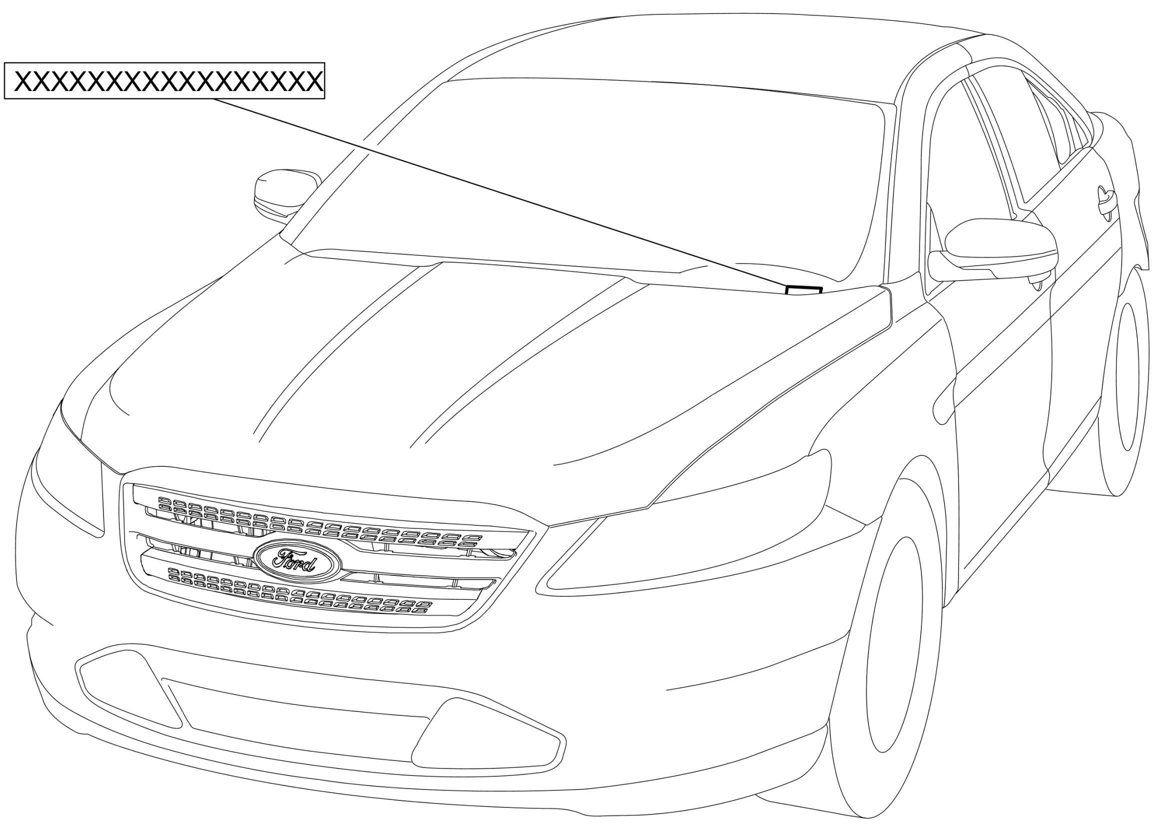
Section 1: General Information - Sedan/Utility Police Interceptor

(Continued)

Item	Description
Belt Milder	Front driver and passenger positions
LATCH (Lower Anchors and Tethers for Children) system on rear outboard seat locations	A standard feature that Ford offers on all its vehicles is the LATCH (Lower Anchors and Tethers for Children) system, which incorporates universal anchoring points in the vehicle seat bight (where the seat back and cushion meet), providing the secure and easy installation of compatible child seats
Seat Belts	Pretensioner/Energy-Management System with Adjustable Height in 1st Row
SOS Post-Crash Alert System	Integrated technology that automatically unlocks the doors and activates the emergency flashers in the event of an airbag deployment
Tire Pressure Monitoring System (TPMS)	The TPMS is designed to alert the driver if the air pressure in one or more tires need/requires attention

Identification Codes

Vehicle Identification Number (VIN) Location



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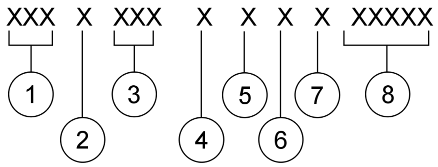
Sedan/Utility Vehicle Identification Number (VIN) Positions

The VIN is a 17-digit combination of letters and numbers. The VIN is stamped on a metal tab riveted to the instrument panel, top upper left of the dash. The VIN is also found on the Vehicle Certification (VC) label.

Section 1: General Information



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Position	Description
1	World manufacturer identifier (WMI)
2	Restraint-type code
3	Vehicle line, series, body type code
4	Engine type code
5	Computer-generated check digit
6	Model year code
7	Assembly plant code
8	Production sequence code

1. World Manufacturer Identifier (WMI)

The first 3 VIN positions are the WMI code.

- 1FA - Ford Motor Company USA, passenger car (Sedan)
- 1FM - Ford Motor Company, USA, MPV. (Utility)

2. Restraint Type

The fourth VIN position is the vehicle restraint system type code.

- H - Active safety belts — all positions, driver and front passenger airbags with 1st and 2nd row side impact protection (Sedan)
- 5 - Active safety belts, all positions, driver and front passenger airbags and side impact airbags - all positions. (Utility)

3. Vehicle Line and Series Code

Positions 5 through 7 indicate vehicle line, and series.

- P2D - Taurus, Front Wheel Drive (FWD), SE
- P2E - Taurus, FWD, SEL
- P2F - Taurus, FWD, Limited
- P2H - Taurus, All-Wheel Drive (AWD), SEL
- P2J - Taurus, AWD, Limited
- P2K - Taurus, AWD, SHO
- P2L - Taurus, FWD, Police Interceptor
- P2M - Taurus, AWD, Police Interceptor
- K7A - Explorer, FWD, Police package
- K7B - Explorer, FWD
- K7D - Explorer, FWD, XLT

- K7F - Explorer, FWD, Limited
- K8A - Explorer, AWD, Police package
- K8D - Explorer, AWD, XLT
- K8F - Explorer, AWD, Limited

4. Engine Type

The eighth VIN position is the engine displacement and number of cylinders.

- T - 3.5L, DOHC, turbocharged, 4 valve, V6
- 8 - 3.5L, Twin Independent Variable Cam Timing (Ti-VCT) V6
- 9 - 2.0L Gasoline Turbocharged Direct Injection (GTDI), in-line 4 cylinder
- R - 3.7L, V6, Ti-VCT

5. VIN Check Digit

The ninth VIN position is the check digit code (0-9).

6. Model Year Code

The tenth VIN position is the model year code.

- F- 2015

7. Assembly Plant Code

The eleventh VIN position is the assembly plant code.

- G - Chicago (Chicago, Illinois)

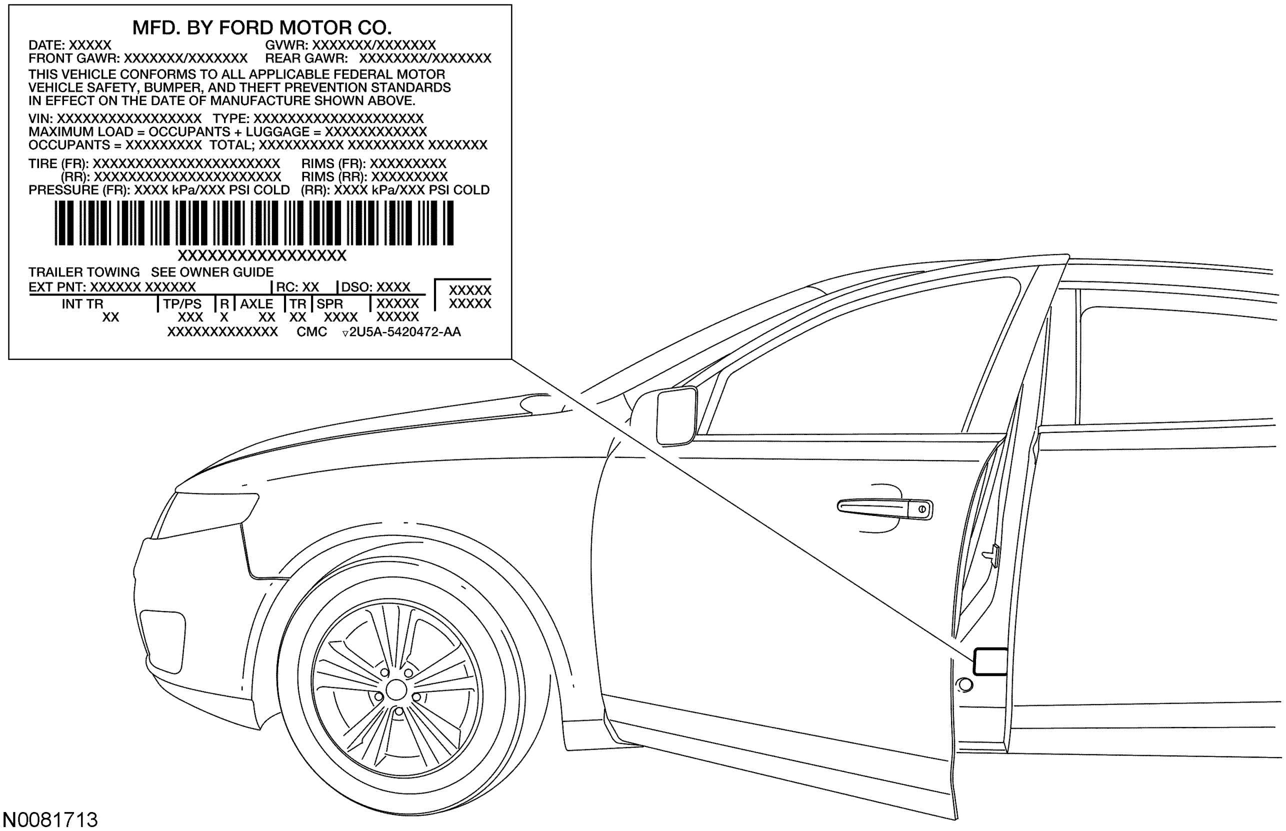
8. Production Sequence Number

The last 6 VIN positions are a numeric code for the vehicle build sequence. This is also the vehicle serial and warranty number. The serial number can also be found on the engine block, transmission and frame.

- A00001-L99999

Vehicle Certification (VC) Label

Section 1: General Information


MFD. BY FORD MOTOR CO.
DATE: XXXXX GVWR: XXXXXXX/XXXXXXX
FRONT GAWR: XXXXXXX/XXXXXXX REAR GAWR: XXXXXXXX/XXXXXXX
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
VIN: XXXXXXXXXXXXXXXXX TYPE: XXXXXXXXXXXXXXXXXXXX
MAXIMUM LOAD = OCCUPANTS + LUGGAGE = XXXXXXXXXXXX
OCCUPANTS = XXXXXXXXX TOTAL; XXXXXXXXXX XXXXXXXXX XXXXXXX
TIRE (FR): XXXXXXXXXXXXXXXXXXXXXXX RIMS (FR): XXXXXXXXX
(RR): XXXXXXXXXXXXXXXXXXXXXXX RIMS (RR): XXXXXXXXX
PRESSURE (FR): XXXX kPa/XXX PSI COLD (RR): XXXX kPa/XXX PSI COLD
XXXXXXXXXXXXXXXXX
TRAILER TOWING SEE OWNER GUIDE
EXT PNT: XXXXXX XXXXXX RC: XX DSO: XXXX XXXXX XXXXX
INT TR TP/PS R AXLE TR SPR XXXXX
XX XXX X XX XX XXXX XXXXX
XXXXXXXXXXXXX CMC ▿2U5A-5420472-AA

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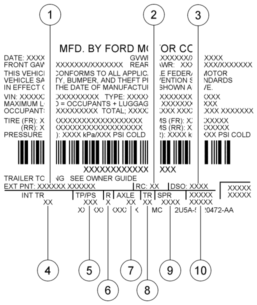
The Vehicle Certification (VC) label contains the manufacturer name, the month and year of manufacture, the certification statement and the Vehicle Identification Number (VIN). It also includes Gross Vehicle Weight Rating (GVWR).

If a vehicle requires replacement of the VC label and is 4 years old or less, an authorized dealer must submit the VIN to their respective regional office. The regional office will submit a web form to the assembly plant for the replacement label. Once the label has been printed, a representative from the regional office will deliver the label to the dealer and witness installation on the vehicle. If a vehicle is more than 4 years old and requires a replacement label, the dealer must submit a request to the Department of Motor Vehicles.

Vehicle Certification (VC) Label Code Positions


1
2
3
4
5
6
7
8
9
10

N0039636

Section 1: General Information

Position	Description
1	Exterior paint color code
2	Region code
3	Domestic special order
4	Interior trim code
5	Tape/paint stripe code
6	Radio code
7	Axle code
8	Transmission code
9	Spring code
10	Powertrain calibration numbering

1. Paint Codes

Vehicle paint codes may be listed as a 2-part code. The first set of paint code numbers/letters listed indicate the vehicle primary body color. The second set of numbers/letters listed (if applicable) indicate a 2-tone or accent body color. All colors are base coat/clear coat.

- E3 - Arizona Beige
- BU - Medium Brown Metallic
- HG - Smokestone Metallic
- J1 - Kodiak Brown Metallic
- J4 - Deep Impact Blue
- JL - Dark Toreador Red (clear coat metallic)
- KR - Norsea Blue Pearl
- YZ - Oxford White
- LK - Dark Blue (police/fleet)
- LM - Royal Blue (police/fleet)
- MM - Ultra Blue (police/fleet) (clear coat metallic)
- LN - Light Blue Metallic (police/fleet)
- TN - Silver Gray Metallic (police/fleet)
- UA - Ebony
- UH - Tuxedo Black Metallic
- W6 - Green Gem #2
- UJ - Sterling Grey Metallic
- UX - Ingot Silver Metallic
- YG - Medium Titanium Metallic
- YZ - Oxford White Solid

4. Interior Trim Code

The interior trim codes are listed below. The first digit listed indicates the seat and fabric style. The second digit listed indicates the interior trim color.

- 7 - Greenwich cloth seating (Sedan)
- C - Cloth seating (police package) (Sedan)
- J - Milled Pebble leather seating (Sedan)
- M - Kensington cloth seating (Sedan)
- P - SOHO mini-perforated leather seating (Sedan)
- Q - Leather with perforated suede seating (Sedan)
- R - Cloth/vinyl seating (police package) (Sedan)

Section 1: General Information

- S - SOHO mini-perforated leather seating SHO (Sedan)
- 7 - Cloth trim A (Utility)
- 8 - Cloth trim B (Utility)
- 9 - Cloth trim C with vinyl, Police package (Utility)
- B - Leather with 10-way driver/6-way passenger power seats (Utility)
- C - Leather with 10-way driver/10-way passenger power seats (Utility)
- F - Cloth trim D, Police package (Utility)

Interior trim color code

- D - Dune (Sedan)
- M - Charcoal Black/Mayan Gray (Sedan)
- W - Charcoal Black (Sedan)
- L - Medium Light Stone (Utility)
- Q - Charcoal Black/Pecan (Utility)
- M - Stone/Medium Light Stone (Utility)
- W - Charcoal Black (Utility)

6. Radio Type Code

The radio type codes are:

- H - High-definition AM/FM stereo with CD player and clock (Sedan)
- X - Premium electronic AM/FM stereo with CD player and clock (Sedan)
- Z - Electronic AM/FM stereo with CD player and clock (Sedan)
- A - Premium AM/FM stereo with CD player (MP3 capable) (Utility)
- M - Premium Plus AM/FM stereo with CD player (MP3 capable) (Utility)
- Z - Electronic AM/FM stereo with CD player (MP3 capable) - Sony (Utility)

7. Axle Ratio Code

The axle ratios are:

- 1 - 2.77 ratio (Sedan)
- 2 - 3.16 ratio (Sedan)
- 3 - 3.39 ratio (Sedan)
- 4 - 3.07 ratio (Sedan)
- 3E - 3.16 ratio (Utility)
- 3F - 3.39 ratio (Utility)
- 3G - 3.36 ratio (Utility)
- 3H - 3.51 ratio (Utility)
- 3J - 3.65 ratio (Utility)

8. Transmission Code

The transmission codes are:

- 6 - 6-speed automatic (6F35)
- C - 6-speed automatic (6F55), Taurus SHO
- J - 6-speed automatic (6F50)

9. Spring Codes

Spring codes list both front and rear spring codes. The first set of characters identify the front springs. The second set of characters identify the rear springs.

- AA - Front Wheel Drive (FWD) vehicles

- BB - All-Wheel Drive (AWD) vehicles
- CC - AWD, Gasoline Turbocharged Direct Injection (GTDI)
- DD - AWD, GTDI performance package
- EE - FWD vehicles
- FF - FWD vehicles
- GG - AWD vehicles
- HH - AWD, GTDI performance package

The front spring base part number is: 5310 (Utility)

The rear spring base part number is: 5560 (Utility)

- AA - AWD vehicles
- BB - FWD, GTDI performance package
- CC - FWD vehicles
- GG - FWD vehicles
- GG - AWD, GTDI performance package
- HH - AWD vehicles
- MM - AWD, GTDI performance package
- NN - AWD, GTDI performance package
- PP - AWD, GTDI performance package

10. Engine Calibration Information

Engine calibration information is located in the lower right corner between the spring code field and the powertrain calibration information. Engine calibration information is limited to a maximum of 5 characters per line (2 lines maximum). Calibration information more than 5 characters long will wrap to the second line of this field.

11. Powertrain Calibration Information

Powertrain calibration information is printed in the lower right corner of the VC label. Only the base calibration information is printed. Revision levels will not appear, however, they can be obtained through a scan tool using the most current software revision.

12. Vehicle Identification Number (VIN)

The VIN is located just below the bar code.

NOTE:
Powertrain calibration information is limited to a maximum of 5 characters per line on the VC label. Because of this, calibration identification consisting of more than 5 characters will wrap to the second line on the VC label.

Item	Description
1	Model year (year in which calibration strategy was first introduced)
2	Vehicle code
3	Transmission code
4	Unique calibrations (designates different hardware to similar vehicles), example: tires or drive ratios
5	Fleet code (describes fleet to which the vehicle belongs), example: 6 — Evaporative Emission (EVAP)
6	Certification region (lead region where multiple regions are included in one calibration), example: A — US federal
7	Revision level (will advance as revisions occur), not printed on label

Good Practices

Process And Quality Assurance Systems

Section 1: General Information

A formalized Process and Quality Assurance system may be helpful in consistently producing high quality products. An overview of some of the key items for such a system are outlined in this section.

Quality Assurance

Completed Unit Sign-Off: All control items should be inspected with a written sign-off. All labels should be inspected and signed off, including verification the information on the labels is correct. All appropriate systems should be checked for leaks. A road test should be performed to verify that all systems are operating correctly. All systems and functions that were provided by Ford should be checked to make sure they function correctly after the build process.

The modifier's Process and Quality Assurance Systems should also assure that appropriate training is provided to the employees.

Minimum And Maximum Screw Sizes

When installing aftermarket equipment, avoid using fasteners that are too long for the application or are in an area which might damage vehicle components, including wiring, brake lines, fuel tank and lines, powertrain components, exhaust system and suspension.

New Vehicle Storage

New Vehicle Storage — General

- Vehicle should be stored in a dry, ventilated place, and protected from sunlight, if possible.
- If vehicle is stored outside, maintenance against rust and damage, as described below, is recommended.

NOTICE:
Keep all rubber parts free from oil and solvents.

New Vehicle Storage — Body

- Wash vehicle thoroughly to remove dirt, grease, oil, tar or mud from exterior surfaces and underside of front fender.
- Periodically wash if vehicle is stored in exposed locations.
- Touch up exposed raw or primed metal to provide rust protection.
- Cover chrome and stainless steel parts with a thick coat of auto wax to prevent discoloration. Rewax as necessary when the vehicle is washed.
- Lubricate all hood, door hinges and latches with a light grade oil.
- Cover the interior soft trim to prevent fading.

New Vehicle Storage — Engine

- Start the engine every 15 days. Run it at fast idle until it reaches normal operating temperature.
- With foot on brake pedal (and brake applied), shift the transmission into all gears while the engine is running.

New Vehicle Storage — Fuel System

- Regularly move vehicle short distances to mix fuel anti-oxidation agents.

NOTE:
During extended periods of vehicle storage (60 days or more), gasoline may deteriorate due to oxidation. This can damage rubber and other polymers in the fuel system and may clog small orifices. A commercially available gasoline fuel stabilizer (Sta-Bil or equivalent) should be added to gasoline-powered vehicles whenever actual or expected storage periods exceed 60 days. The manufacturer's instructions packaged with the product should be followed. The vehicle should then be operated at an idle speed to circulate the additive throughout the fuel system.

New Vehicle Storage — Tires

Most high performance tires are made with nylon overlay.

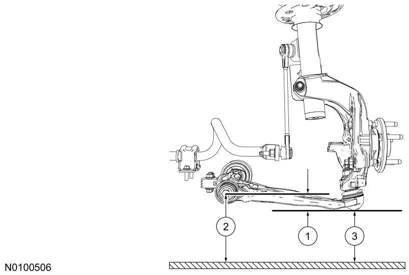
As such, the following steps should be taken to avoid flat spotting when the vehicle is not used for a period of time.

- Keep the vehicles tire pressure at the recommended operating pressure.
- If the vehicle is stored for a period longer than 15 days, it should be moved several feet during each 15-day period. The vehicle should be parked after being moved so that a different portion of the tread contacts the ground.

Section 1: General Information

Front Ride Height Measurement

Item	Specification
Front Ride Height	
Front (base)	66 mm (2.59 in) ± 10.0 mm (0.39 in)

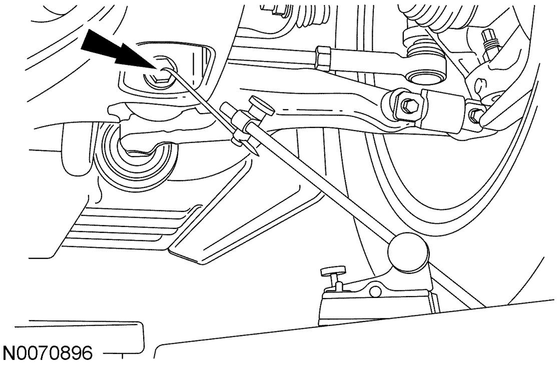


Item	Description
1	Ride height = 2 - 3
2	Measurement 2
3	Measurement 3

NOTE:
Make sure the vehicle is positioned on a flat, level surface and the tires are inflated to the correct pressure. Vehicle should have a full tank of fuel.

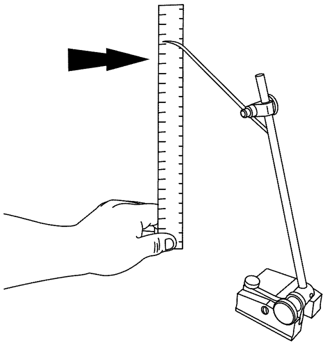
1. Position a suitable surface gauge (such as Starrett 57D Surface Gauge) on a flat, level surface and adjust the gauge's arm until the scriber point is located in the center of the lower arm forward mounting bolt.

   Lock the surface gauge in this position.



2. With the surface gauge positioned on a flat, level surface, record the measurement of the surface gauge position (measurement 2).

Section 1: General Information



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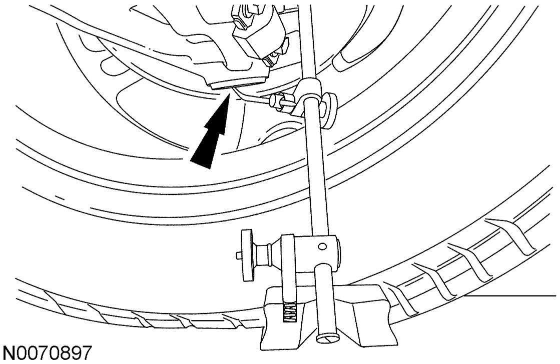
3. Position the surface gauge on the same flat, level surface and adjust the gauge's arm until the scriber point is located on the lowest and furthest inboard point of the lower ball joint.

- Lock the surface gauge in this position.



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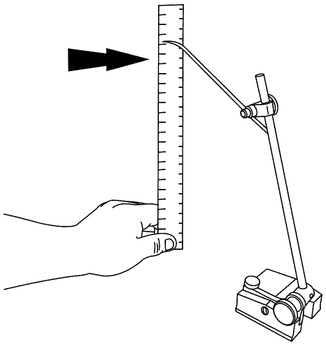
4. With the surface gauge positioned on a flat, level surface, record the measurement of the surface gauge position (measurement 3).



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5. Subtract measurement 2 from measurement 1 to obtain the front ride height.

   Refer to Specifications in this section.

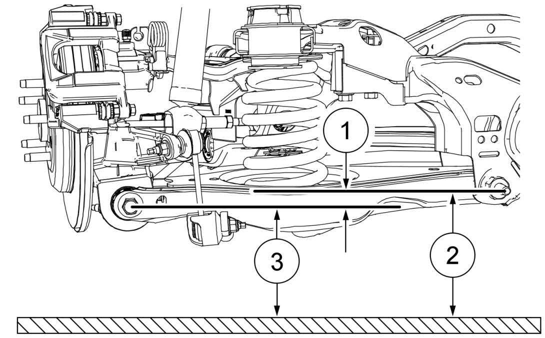
Rear Ride Height Measurement

NOTE:
Make sure that the vehicle is positioned on a flat, level surface and the tires are inflated to the correct pressure. The vehicle should have a full tank of fuel.

Section 1: General Information

1. Measure the distance between the flat level surface and the center of the lower control arm-to-subframe bolt (measurement 2).
2. Measure the distance between the same flat level surface and the center of the lower arm-to-knuckle bolt (measurement 3).
3. Subtract measurement 3 from measurement 2 to obtain the rear ride height.

- Refer to Specifications in this section.



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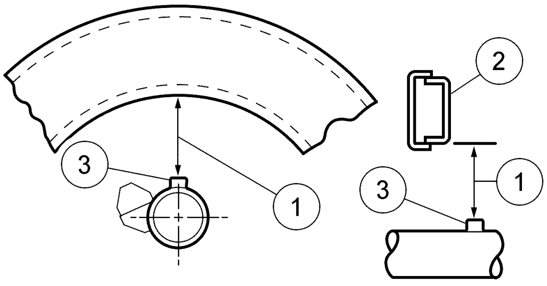
Item	Description
1	Ride height = 2 - 3
2	Measurement 2
3	Measurement 3

Item	Specification
Rear Ride Height	
Police (coil)	145.0 mm (5.7 in) ± 10.0 mm (0.39 in)



N0072249

Item	Specification
1	Ride height
2	Inner frame reinforcement
3	Rear axle jounce stop

Section 1: General Information

NOTE:
Make sure that the vehicle is positioned on a flat, level surface and the tires are inflated to the correct pressure. Vehicle should have a full tank of fuel.

4. Measure the distance between the inner frame reinforcement (Item 2) and the rear axle jounce stop (Item 3) to obtain the rear ride height (Item 1).

Tire Pressure Monitoring System (TPMS) Principles of Operation

The TPMS monitors the tire pressure using 4 valve stem mounted TPMS sensors to provide accurate tire pressures. Each individual sensor contains its own battery and transmits tire pressure data to the controlling module every 60 seconds when the vehicle speed exceeds 32 km/h (20 mph). The TPM module is a radio receiver that collects the tire pressure data and relays the information via the MS-CAN to the BCM. All of the TPMS functions are controlled by the BCM. The TPMS sensors are trained to the BCM, which records each TPMS sensors unique identifier. The BCM records where each TPMS sensor is located based on the training order and compares the actual tire pressure with the desired tire pressure as indicated on the Vehicle Certification label. If the tire pressure deviates from the desired tire pressure the BCM, using the HS-CAN, signals the IPC to illuminate the TPMS warning indicator and also displays a message on the message center. The programmed tire pressure cannot be changed.

This vehicle, as delivered by Ford Motor Company, conforms to Standard FMVSS138, Tire Pressure Monitoring Systems.

This system may not function if any of the following components are removed, relocated or modified in any way:

- Original Equipment Manufacturer (OEM) wheels and tires
- Tire pressure sensors or valve stems
- Body Control Module (BCM)
- Body Control Module (BCM) software and calibrations
- Tire Pressure Module (TPM)
- Instrument Cluster (IC) module
- Instrument Cluster (IC) software and calibrations
- Vehicle wheelbase longer than originally released

Certain modification could cause reduced system performance, up to and including the complete loss of TPMS functionality. This may include:

If concerns are present on a Utility Intercepter please reference police modifier bulletin P-018 located at www.fleet.ford.com/truckbbas/non-html/2013/P-018.pdf

- Non-OEM wheels or tires
- The addition of steel carcass or run-flat tires
- Modification of the vehicle's recommended tire pressure
- Lengthening of the vehicle's wheelbase may affect signal strength of the sensors to a point where the rear sensors can no longer be heard by the TPM module. (Vehicles certified at released wheelbases only)
- The addition of metallic structures, such as prisoner partitions, may affect the signal strength of the sensors and could interfere or prevent the TPM module from hearing the rear sensors.
- The addition of intended or unintended transmitters to the vehicle may affect the signal strength of the sensors or interfere with the TPM module's antenna

The TPMS, as delivered from the Ford Motor Company, complies with part 15 of the FCC rules and with RS-210 of Industry Canada. Operation is subject to the following 2 conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Ambient Temperature Change and Tire Pressure

NOTICE:
Do not inflate tire higher than maximum pressure stamped on tire sidewall. Premature tire wear or damage to the tire may result.

Tire pressures fluctuate with temperature changes. For this reason, tire pressure must be set to specification when tires are at outdoor ambient temperatures. If the vehicle is allowed to warm up to shop temperatures, and the outside temperature is less than shop temperature, the tire inflation pressure must be adjusted accordingly.

Section 1: General Information

If the tires are inflated to specification at shop temperatures, and the vehicle is moved outdoors when the outdoor ambient temperature is significantly lower, the tire pressure may drop enough to be detected by the TPMS and activate the TPMS warning lamp.

As the ambient temperature decreases by 6°C (10°F), tire pressure decreases 7 kPa (1 psi). Adjust the tire pressure by 7 kPa (1 psi) for each 6°C (10°F) ambient temperature drop as necessary to keep the tire at the specified vehicle certification label pressure. Refer to the following tables to adjust the tire pressure indoors for colder outside temperatures.

Table 1. Use Table to Adjust Tire Pressure Inside Garage for Colder Outside Temperature[1]

**** Do Not Inflate Tire Higher than Maximum Pressure Stamped on Tire Sidewall. ****

Table is based on a Garage Temperature of 70˚F. Max Pressure Adjustment is 7 psi.

	Tire Placard Pressure (PSI)																	
Outside Temperature (˚F)	30	32	34	35	38	40	41	42	45	50	55	60	65	70	75	80	85	90
70	30	32	34	35	38	40	41	42	45	50	55	60	65	70	75	80	85	90
60	31	33	35	36	39	41	42	43	46	51	56	61	67	72	77	82	87	92
50	32	34	36	37	40	42	43	44	47	53	58	63	68	73	79	84	89	94
40	33	35	37	38	41	43	44	45	49	54	59	64	70	75	80	86	91	96
30	34	36	38	39	42	44	46	47	50	55	61	66	72	77	82	87	92	97
20	35	37	39	40	43	46	47	48	51	57	62	67	72	77	82	87	92	97
10	36	38	40	41	45	47	48	49	52	57	62	67	72	77	82	87	92	97
0	37	39	41	42	45	47	48	49	52	57	62	67	72	77	82	87	92	97
-10	37	39	41	42	45	47	48	49	52	57	62	67	72	77	82	87	92	97
-20	37	39	41	42	45	47	48	49	52	57	62	67	72	77	82	87	92	97
-30	37	39	41	42	45	47	48	49	52	57	62	67	72	77	82	87	92	97
-40	37	39	41	42	45	47	48	49	52	57	62	67	72	77	82	87	92	97

Table 2. Use Table to Adjust Tire Pressure Inside Garage for Colder Outside Temperature (Metric Units)[1]

**** Do Not Inflate Tire Higher than Maximum Pressure Stamped on Tire Sidewall. ****

Table is based on a Garage Temperature of 21˚C. Max Pressure Adjustment is 50 kPa.

	Tire Placard Pressure (kPa)																	
Outside Temperature (˚C)	205	220	235	240	260	275	285	290	310	345	380	415	450	485	515	550	585	620
21	205	220	235	240	260	275	285	290	310	345	380	415	450	485	515	550	585	620
16	215	230	240	250	270	285	290	295	315	350	385	420	460	495	530	565	600	635
10	220	235	250	255	275	290	295	305	325	365	400	435	470	505	545	580	615	650
4	230	240	255	260	285	295	305	310	340	370	405	440	485	515	550	595	625	660
-1	235	250	260	270	290	305	315	325	345	380	420	455	495	530	565	600	635	670
-7	240	255	270	275	295	315	325	330	350	395	425	460	495	530	565	600	635	670
-12	250	260	275	285	310	325	330	340	360	395	425	460	495	530	565	600	635	670
-18	255	270	285	290	310	325	330	340	360	395	425	460	495	530	565	600	635	670
-23	255	270	285	290	310	325	330	340	360	395	425	460	495	530	565	600	635	670
-29	255	270	285	290	310	325	330	340	360	395	425	460	495	530	565	600	635	670
-34	255	270	285	290	310	325	330	340	360	395	425	460	495	530	565	600	635	670
-40	255	270	285	290	310	325	330	340	360	395	425	460	495	530	565	600	635	670

[1] When Outside (Ambient) Temperature is greater than 21˚C (70˚F), Inflate tires to placard pressure.

[1] Use the table to adjust tire pressure for P-metric and LT tires only.

N0072166

Table of Contents

Contents **PAGE**

Section 2: Electrical 2-3
  Electrical Basics 2-3
  NEW Front Headlamp Housing Only – 86P 2-3
  NEW Front Headlamp Lighting Solution-66A-Changes 2-4
  NEW Forward Indicator Pocket Warning Lights – 21W 2-5
  NEW Feature Change To The Ready For The Road (option 67H) 2-6
  NEW Forward Warning Auxiliary Light – 21L 2-7
  Tail Lamp Housing Prep - 86T 2-7
  NEW Feature Change – Tail Lamp Lighting 2-7
  Side Marker LED – Side View Mirrors - 63B 2-8
  Rear Quarter Glass Side Marker Lights - 63L 2-8
  Rear Lighting Solution – 66C 2-9
  General Guidelines For Vehicle Modification 2-10
  Upfitter Sealing Pass-Through Points/Openings 2-10
  Sealing Pass-Through Points/Openings 2-11
  Sealing Pass-Thru Points/Openings 2-13
  Sealing Option For Body Openings/Pass-Through Points 2-13
  Keep-Alive Memory Power 2-14
  Wire Routing 2-16
  Wire Retention and Routing 2-17
  Splices and Repairs 2-18
  Heat Shrinkable Tubing (Heat Shrink) (Ford Specification ESB-M99D56-A2) 2-21
  Recommended Splicing Method — Crimp (For 10–22 AWG Diameter Wire to Like Wire Diameter) 2-21
  Electrical Systems Management 2-23
  Alternator Output 2-23
  Charging Margins 2-24
  Vehicle Component Electrical Loads 2-25
  PCM — Red Area 2-26
  Headlight and Tail Light Modifications 2-26
  Disabling Brake Lights 2-26
  Brake Applied Signal 2-26
  Sedan Interceptor - Front Ground Strap - Passenger Side Hood 2-27
  Sedan Interceptor - Trunk Lid Strap - Passenger Side 2-27
  Utility Interceptor - Front Ground Strap - Passenger Side Hood 2-28
  Utility Interceptor - Liftgate - Driver Side 2-28
  Regular Production Options (RPO) 2-29
  Siren/Speaker 2-29
  Signaling Limitations 2-29
  Driving Limitations 2-29
  Configuration Instructions 2-29
  Individual LED Flash Pattern Programming 2-30
  Sedan/Utility Interceptor Wig-Wag 2-31
  Group LED Flash Pattern Programming 2-32
  New Utility Police Interceptor OPTIONAL Rear Door Release 2-33
  Utility - Standard Feature On Utility Police Interceptor Rear Cargo Door Release 2-33
  Sedan - Luggage Compartment Lid Release Switch 2-35
  NEW Sedan Second Luggage Compartment Lid Release Switch 2-35
  Sedan Upfitter Wire Bundle Dash Panel Pass-Through 2-36
  Sedan — Lower Center Instrument Panel Removal and Installation 2-37
  Sedan — Front Power And Vehicle Signals Access Area 2-39
  Sedan — Siren Speaker Connector 2-42
  Sedan — Police Options 14–Way Connector 2-43
  New 2017 Utility Police Interceptor Horn Ring Circuit 2-44
  Sedan — Horn Ring Circuit 2-44
  Sedan — Radio and Speaker Connector 2-46
  Sedan – 4–Way Connector For All Police LED Light Heads 2-50
  Sedan — Grille LED Light Connector 2-51
  Sedan — Front Wiring Prep Blunt Cut Circuits 2-52
  Sedan — Siren Speaker Connector 2-53
  Sedan — Front Lighting Solution Wig-Wag LED And Front Corner LED Lights Connector. 2-54
  Sedan — Pigtail Information 2-56
  Sedan — Rear Power Access 2-56
  Sedan — Trunk Relay Center 2-62
  Sedan — My Fleet Management 2-62
  NEW Sedan/Utility Police Idle System 2-62
  New Sedan/Utility Silent Mode (If Equipped) 2-63

Sedan — Courtesy Lamp Disable (Dark Mode) 2-64
Sedan — Steering Wheel Switches 2-64
Sedan — Steering Wheel Switch Cluster Display 2-65
Fuse Information 2-65
Sedan — Battery Junction Box 2-66
Sedan — Body Control Module 2-67
Electrical Component Resource 2-68
Sedan — Body Control Module 2-69
Sedan — Electrical Component Resource 2-71
NEW Utility Upfitter Wire Bundle Dash Panel Pass-Through 2-71
Utility — Power and Vehicle Signal Access Areas 2-73
Utility — Lower Center Instrument Panel Removal 2-73
Front Power And Vehicle Signals Access Area 2-76
Utility — Police Options 14–Way Connector 2-79
Utility — Radio And Speaker Connector 2-82
Utility – 4–Way Connector For All Police LED Light Heads 2-86
Utility — Front Wiring Prep Blunt Cut Circuits 2-88
Utility — Siren Speaker 2-89
Utility — NEW Rear Power Access Location — late model year availability 2-93
Utility — Rear Power Access 2-94
Utility — Steering Wheel Switches 2-97
Utility — Wiring Reference Information 2-100
NEW Sedan — Wiring Diagrams: Police Interceptor 2-100
NEW Utility — Wiring Diagrams: Police Interceptor Battery Junction Box (BJB) 2-132

Section 2: Electrical

Section 2: Electrical

Electrical Basics

Inside a vehicle, electricity is supplied through "hot" wires, comparable to the pressurized supply pipes of a plumbing system. At various points along the wires are outlets in the form of lights, switches and receptacles. Turning on a light switch is somewhat like opening a faucet to let water run — an electric current flows through the hot wire to make the light glow. Once the electricity has done its work, its potential drops to zero, just as water loses pressure after flowing through a sink or laundry tub. The electrical system has "drains" — which are the ground wires that return the current to its source just as a plumbing system has drain pipes through which water runs into the sewer mains or the ground.

The light or equipment powered by the current, technically called the load, can be compared to a water wheel that remains motionless until a stream of water causes it to turn. A load may be one of two kinds. The first consists of a resistance — a material that permits the passage of electric current, but only with difficulty, and thereby creates heat. The tungsten filament of an incandescent bulb is resistance; so is the heating element of an electric heater of a coffee pot. A load may also be an inductance — typically a motor with windings of copper wire, in which the magnetic fields generated by the current create motion. At any moment, the demand on an electrical system depends on the number of loads in operation and their consumption of energy, just as demand on a water system depends on how many faucets are opened and how wide they are opened.

The mechanics and physical fittings of the system are simple. Current moves throughout the vehicle in wires of different sizes, according to the current a circuit may have to carry. Power is supplied directly to equipment through connectors.

Electrical Terms

VOLT is the unit of electrical potential, equal to the difference of electrical potential between two points on a circuit.

AMPERE is the unit used to measure the amount of current - that is, the number of electrically charged particles called electrons - that flows past a given point on a circuit each second. It is similar to measuring the amount of water flowing through a pipe at any given point. The larger the pipe is, the more water that can flow past the point per second. Similarly, the bigger the wire is, the more current that can flow through it at any given point. Current that has lost its voltage still has amperage as it completes the circuit and returns to the battery.

WATT is the unit of power. It indicates that rate at which a device converts electric current to another form of energy, either heat or motion, or to put it another way, the rate at which a device consumes energy.

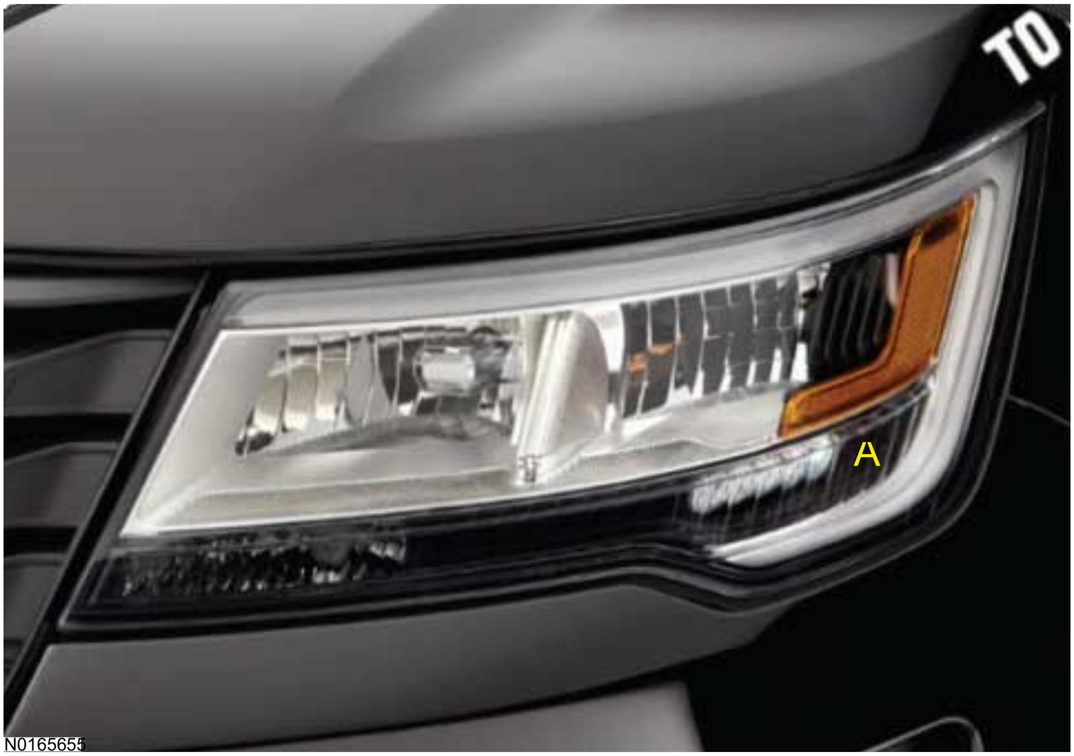
The relationship of volts, amperes and watts to one another is expressed in a simple equation that enables you to make any calculations you may need for proper and safe electrical modifications to the vehicle. Volts x amperes = watts. If the current is at 12 volts and a device requires 4 amperes of current, the equation will read 12 volts x 4 amperes = 48 watts.

To figure the current needed for a device rated in watts, turn the equation around: watts/volts = amperes. For example, if you have a piece of equipment, such as a communications radio, that uses 120 watts: 120 watts/12 volts = 10 amperes.

NEW Front Headlamp Housing Only – 86P

A – Preformed hole for new LED front corner marker light used in police applications. Does not include LED installed lights (eliminates the need to drill/cut headlamp housing assemblies – shipped with cover with 4 screws.

Section 2: Electrical



NEW Front Headlamp Lighting Solution-66A-Changes

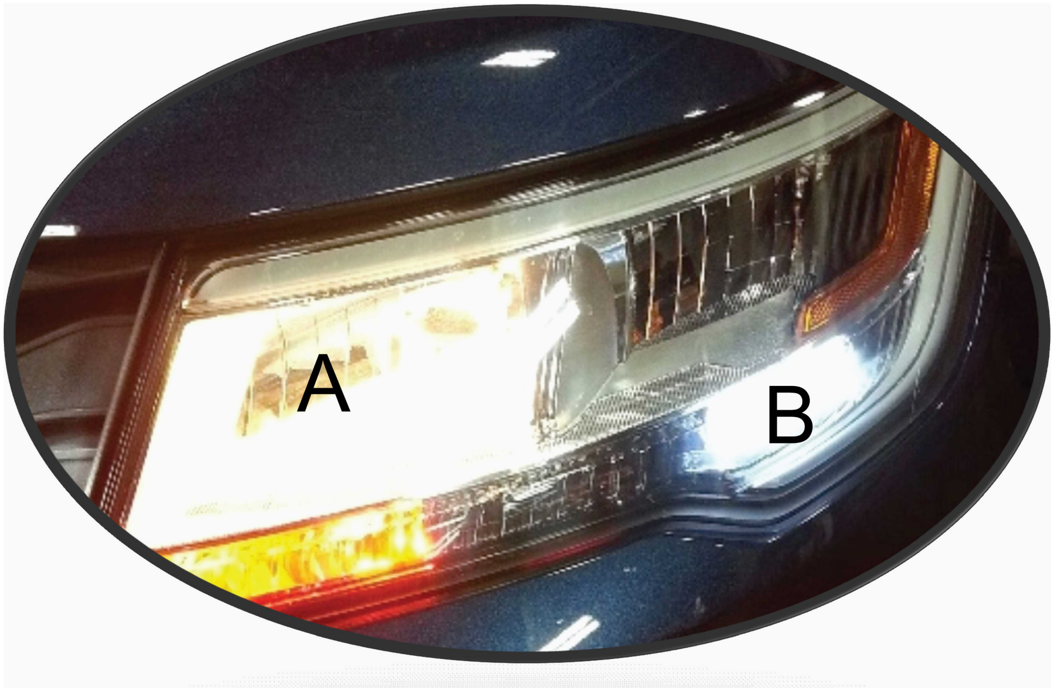
A – High Beam Wig-Wag Warning

- The option is synchronized independently from other LEDs
- Stand-alone option - **wiring not included**
- Pre-wiring included with option 60A. Pre-wiring for grille lamp, siren and speaker – (option 60A)

B – High Intensity Front Corner Marker Lights

- Synchronized to the grille lights, forward auxiliary lights (Figure A) and mirror lights
- Stand-alone option – **wiring not included**
- Pre-wiring included with option 60A. Pre-wiring for grille lamp, siren and speaker – (option 60A)
- Flash pattern 1 – factory setting

Section 2: Electrical



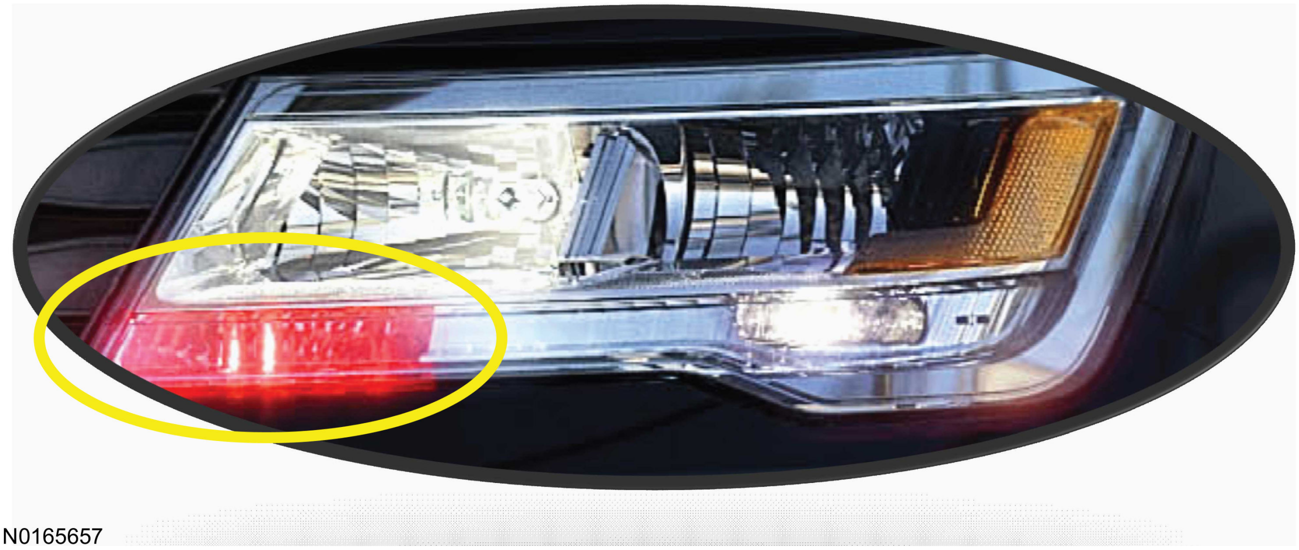
N0165656

NEW Forward Indicator Pocket Warning Lights – 21W

A – Forward Indicator Pocket Warning Lights – 21W

- Controlled through the forward lighting harness and the instrument panel control circuit (white 14 - way connector)
- This option is synchronized independently from the other LEDs
- Stand-alone option – **wiring not included**
- Wiring kits recommended-with option
- Pre-wiring for grille lamp, siren and speaker – (option 60A) or
- Included with Ultimate wiring package – (option 67U)
- Flash pattern 1 – factory setting

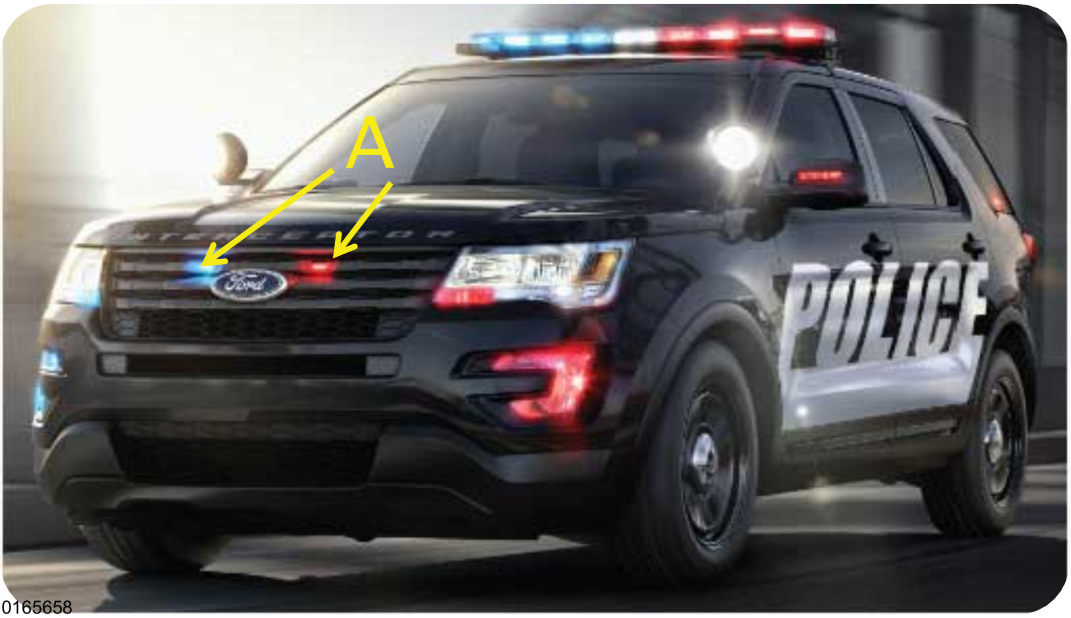
Section 2: Electrical



N0165657

NEW Feature Change To The Ready For The Road (option 67H)

- Controlled through the forward lighting harness (14290) instrument panel and overlay harness control circuit (included with this option)
- Synchronized with the forward marker lights Option 66A side view mirror lights – (Option 63B) and forward auxiliary lights – (Option 21L)
- Flash pattern 11 – factory setting



N0165658

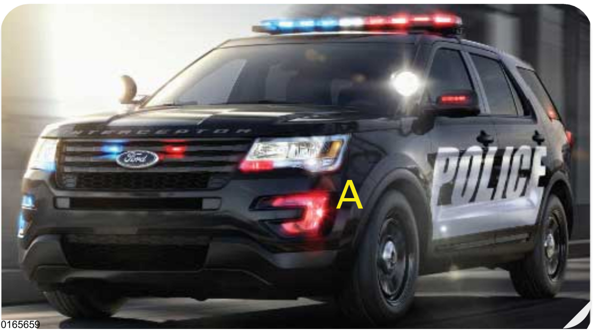
A. Integrated LED grille lights

Section 2: Electrical

NEW Forward Warning Auxiliary Light – 21L

A – Front Warning Auxiliary Light – 21L

- Stand-alone option – **control wiring not included**
- To receive factory wiring, requires option:
- Pre-wiring for grille LED lights (option 60A)
- Controlled through the forward lighting harness 14290 instrument panel control circuit (white 14-way connector)
- Flash pattern 10



Tail Lamp Housing Prep - 86T

- Pre-formed holes with standard twist lock sealing capability
- Eliminates need to drill housing assemblies
- Pre-formed holes are plugged
- **NOTE:**
  Does not include LED installed lights

EMERGENCY
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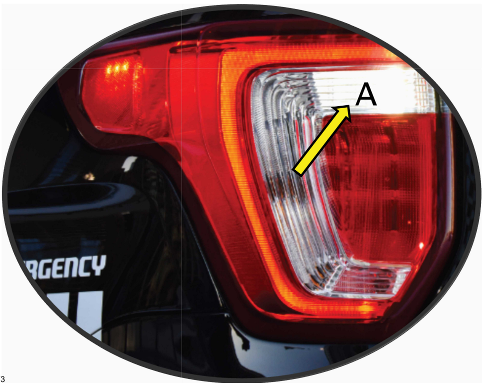
NEW Feature Change – Tail Lamp Lighting

A – Tail Lamp Lighting Solution – 66B Rear Corner Marker Light - Feature Change

- Synchronized with rear quarter glass side marker lights (option 63L) and rear lighting solution (option 66C)

Section 2: Electrical

- Installed adjacent to reverse light pocket
- Flash pattern 1 – factory setting



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Side Marker LED – Side View Mirrors - 63B

Side View Mirrors - Side Marker LEDs

- Linear-high-intensity LED lights (driver side red / passenger side blue)
- Stand-alone option - **wiring not included**
- Pre-wiring for grille LED lights, siren and speaker – (Option 60A)
- Forward Lighting Harness (14290) instrument panel control circuit (14-way connector)
- Flash pattern red 1 / blue 2 – factory setting

N016567

Rear Quarter Glass Side Marker Lights - 63L

A - Rear Quarter Glass Side Marker Lights

Section 2: Electrical

- Wide-angle high-intensity LED lights (driver side red / passenger side blue)
- Standalone Option – **wiring not included**
- Flash Pattern Red 1 / Blue 2 – factory setting

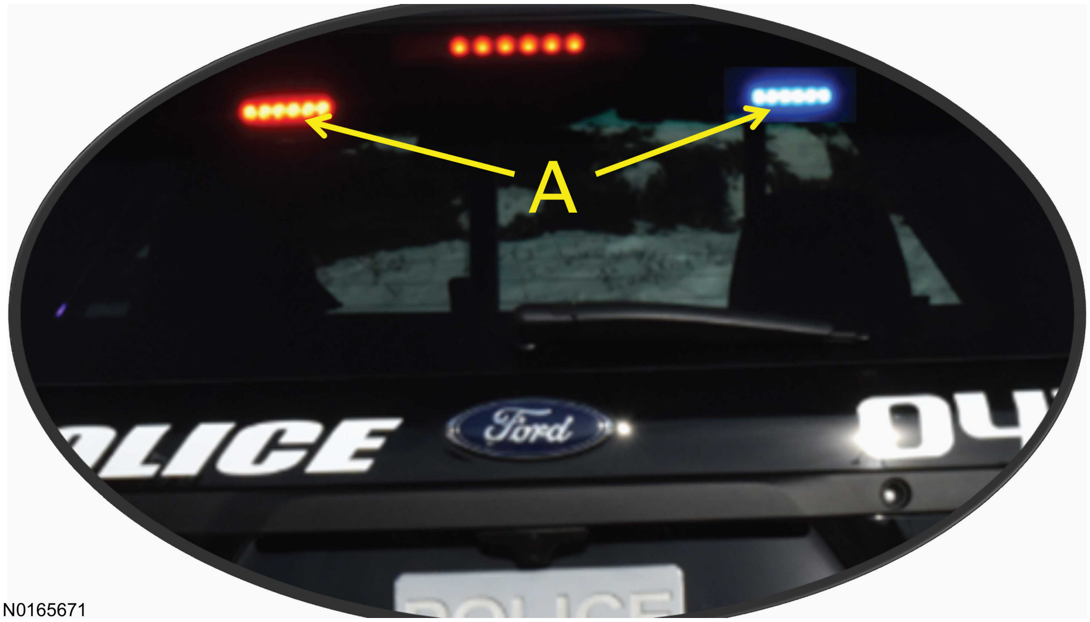
Rear Lighting Solution – 66C

A - Includes 2 flashing linear hign-intensity LED lights (driver side red / passenger side blue) mounted to the inside of the liftgate glass

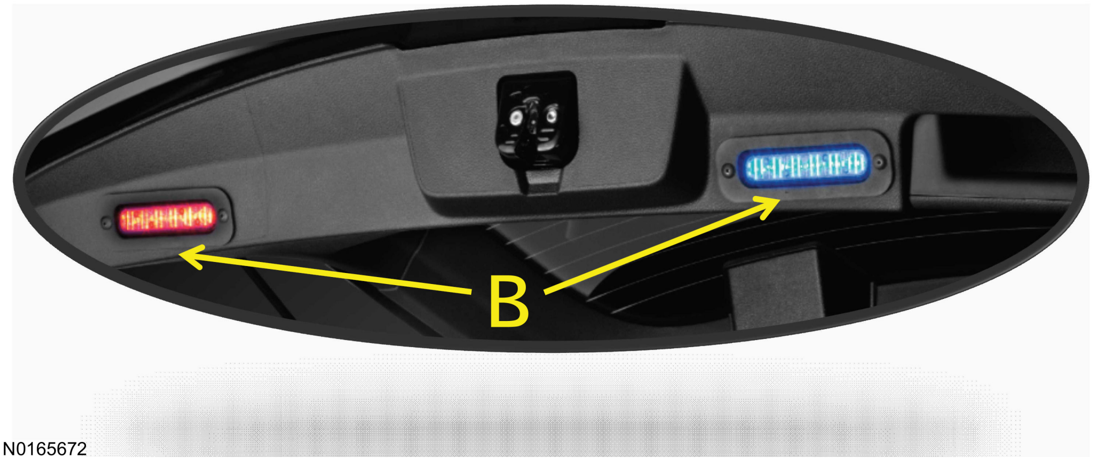
B - Includes 2 flashing linear hign-intensity LED lights (driver side red / passenger side blue) mounted to the inside lip of liftgate

- Stand-alone option – wiring not included (LED lights only).
- Flash pattern red 1/ blue 2 – factory setting

NOTE:
This package (66C) is included with ready for the road package (67H)



Section 2: Electrical



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General Guidelines For Vehicle Modification

- Provide circuit protection (fuses) for all wiring. The fuse rating should not exceed either the rated wiring current capacity or the total current requirements for all the add-on components on the circuit. Install fuses as close to the point of tapped power as possible.
- Document all revisions to the electrical system and place with the vehicle Owner's Literature. Color code and/or label all revisions or additions to wiring.
- Provide protective covering in all areas that could be damaged during normal equipment installations.
- Disconnect the negative battery cable of vehicles stored on site to reduce the possibility of draining the battery by lights or other equipment.
- Do not allow control panels attached to the instrument panel to protrude into the driver and passenger air bag deployment zones. For additional information, refer to Section 5: Reference Information in this guide.
- Do not install switches and gauges in the driver or passenger knee impact areas.
- Inspect all Ford gauges, lights and switches for correct operation after instrument panel work is performed.
- Properly secure any relocated or removed wiring while working behind the instrument panel to prevent chafing, squeaks and rattles.
- Provide adequate retention for wiring harnesses so that they are clear of bolts, corners or edges which could abrade the wires during normal vehicle operation.
- Anticipate incorrectly routed wiring situations and protect all wiring from penetration by screws and raw edges.
- Weather-seal all electrical connectors exposed to the elements.
- Do not use quick splice connectors or wire nuts.
- Install the fuse panel so fuses are readily accessible.
- Make sure that connections are easily accessible for assembly and service.
- Make sure submersible connectors do not lose their seals under extreme assembly conditions such as bending wires 90 degrees immediately after the connector.
- Whenever using connectors, use a socket (female) connector on the electrical source side and a plug (male) connector on the electrical load side to reduce the possibility of a short circuit when disconnected.
- Air bag restraint systems must remain intact as received from Ford Motor Company. Before any vehicle modifications are performed, the system must be disarmed by following the instructions provided in the current Workshop Manual.
- Adherence to the above guidelines is not to be construed as approval by Ford Motor Company of any specific revisions or additions to the vehicle's original electrical system.

Upfitter Sealing Pass-Through Points/Openings

Aftermarket upfit modification of Sedan Police Interceptor and Utility Police Interceptor vehicles can result in openings that allow external air and its contents to enter the vehicle that have not been sealed to original design intent.

Section 2: Electrical

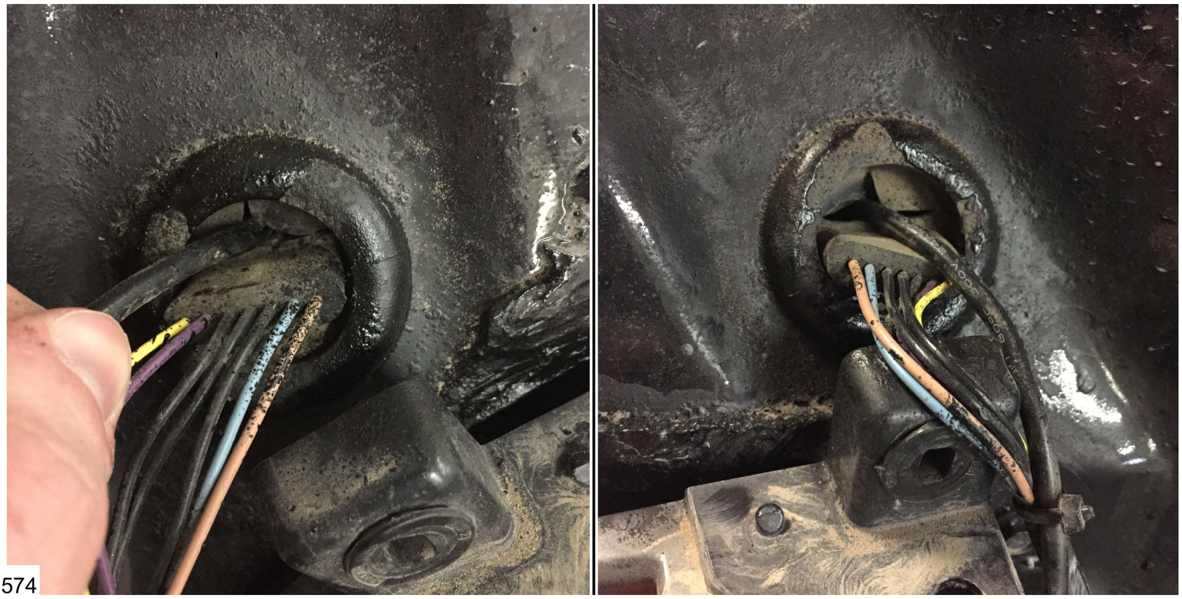
Examples of openings in some areas that were not properly sealed and allowed external air and its contents to enter the cargo area of the Utility Police Interceptor or trunk of the Sedan Police Interceptor. Proper care and due to diligence must be used on all openings at any location on the vehicle from the dash panel to the rear of the vehicle.

Any and all holes created or existing grommets affected during upfit which are exposed directly or indirectly to outside air MUST be completely sealed using Motorcraft® Seam Sealer (TA-2-B).

Sealing Pass-Through Points/Openings

Some Examples from a Utility Police Interceptor That are not properly sealed are shown in the following:

- Any holes in the rear of the vehicle must be sealed.
- Wiring passing through sheet metal and/or existing grommets behind the passenger and driver side tail lamps must be fully sealed using Motorcraft® Seam Sealer (TA-2-B)



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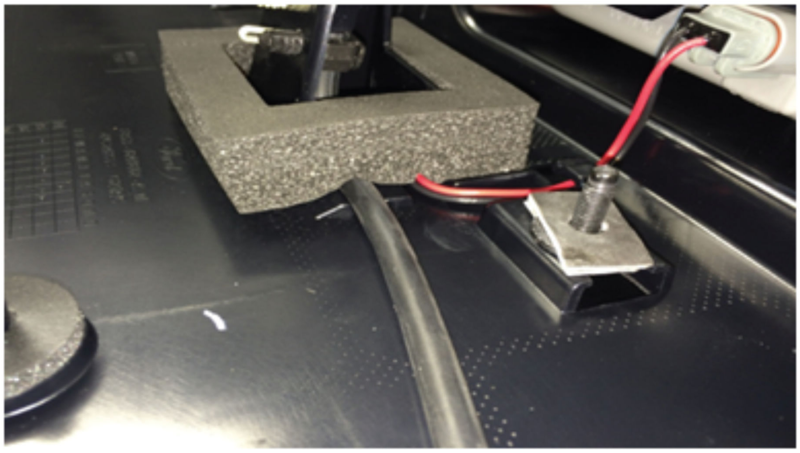
Rear Spoiler Remove And Install

- Removal of the rear spoiler requires thorough sealing upon reinstallation.
- Inspect the foam tower seal and ensure that the wiring and washer line are properly routed and are not compromising the sealing interface. (Figure 3)
- Repair and/or re-seal as necessary using Motorcraft® Seam Sealer (TA-2-B).
- Replace any damaged plastic retainer clips with close attention to the foam gaskets. Repair any deformed sheet to ensure a good seal

Section 2: Electrical



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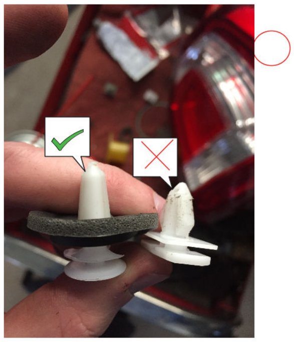

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Liftgate Openings/Holes

Any holes in the liftgate/Trunk of the Utility/Sedan Police Interceptor must be sealed with Motorcraft® Seam Sealer (TA-2-B).

Section 2: Electrical

N0177537

Sealing Pass-Thru Points/Openings

Liftgate Bulb Seal

- If the liftgate bulb seal is damaged, or is removed for any reason, it should be replaced and properly seated.
- If the trunk is damaged, or is removed for any reason, it should be replaced and properly seated.

Underbody

- Any holes in the body must be sealed with Motorcraft® Seam Sealer (TA-2-B).
- Any damaged parts must be replaced. Following are some examples:
- spare tire tub
- auxiliary A/C pass-through
- air extractors (replace if damaged)
- wiring grommets
- body plugs
- floor pan

Dash Panel

Any seals and/or holes in the dash panel must be replaced and/or properly sealed using Motorcraft® Seam Sealer (TA-2-b).

Sealing Option For Body Openings/Pass-Through Points

- Pass-through or other openings of similar size should be sealed using the recommended foil-backed mastic patch.
- Foil-backed mastic patch should be used to cover and seal body openings.
- Part number for foil-backed mastic patch:
- Following are service part numbers for two different size foil-backed mastic patches:
- 4L3Z18203A16AA; size of patch - 1.5 x 147 x 330mm
- DA5Z65203A16A; size of patch - 1.5 x 100 x 300mm

Section 2: Electrical

Keep-Alive Memory Power

The electronic engine and transmission control modules require battery power to be supplied at all times in order to maintain the keep-alive memory. Keep this in mind when installing load disconnect switches or solenoids.

Equipment Grounding Guidelines

- Do not ground the body to the transmission or transmission cross-member. Ground accessories to the chassis or the vehicle battery.
- Splicing into circuitry relating to the electronic engine and/or transmission control systems is not acceptable because of the adverse effect on the electronic system operation.
- Adequately protect electrical connections exposed to the elements.

Wire Insulation

- Polyvinyl Chloride (PVC), rated at 90°C (194°F), is the standard wire insulation that is acceptable for inside body use but is not acceptable for under hood/under body wiring.
- Hypalon insulation should be used on links only (Ford Specification ESB-M1L54-A).
- Cross-linked Polyethylene (XPLPE or SXL), rated at 135°C (275°F), is the required insulation for under hood/underbody applications (Ford Specification ESB-M1L123-A).
- GXL can be used as an alternate wire (Ford Specification ESB-M7L85B) as long as the concentricity specifications are met. To provide a water-resistant seal in conjunction with crimp connectors, a Duraseal crimp connector is recommended since it is designed to account for outside wire diameter that is smaller than the present SXL wire.

Terminals and Connectors

Connector Types

- Submersible (Sealed) — A connector that is capable of being immersed in water.
- Weather-resistant — A connector that will retain its sealing and connection qualities while being exposed to adverse weather conditions.
- Duraseal crimp — A supplier trade name for a sealed wiring repair or splice.

When a connection is not defined (typical situation — harness-to-harness connectors), the following suggestions should be implemented:

- Determine the connector type. If it will be located in a hostile environment, use a submersible (sealed) connector; if not, use an open connector. A hostile environment is defined as being exposed to water and/or salt accumulation and/or high temperatures (i.e., under hood, exterior panels and footwells). Use in-line connectors with secondary locks to prevent the terminal from being pushed out.
  - Do not use single wires smaller than 14-gauge in a 2-way or larger weather-resistant connector (the very large style), since the wire may break during disengagement.
  - Use Hypalon, XLPE or Elexar insulation in submersible connectors to maintain sealing integrity. PVC is not acceptable because cold flows and allows setting in a deformed pattern, therefore compromising the integrity of the seal.

- Determine the terminal type. Base your decision on wire gauge, current carrying capacity, connector type and insulation type.
  - Use non-detent low insertion force terminals whenever possible.
  - Do not use low insertion force female terminals in weather-resistant connectors.
  - Analyze circuit requirements (signal levels, current, voltage) to determine the proper plating material (such as gold). Use of non-plated terminals is not recommended.
  - Do not use plugs to seal holes in micropin connector grommets. It is very easy to forget to insert them during manufacturing and ruin the seal. Only use a grommet with the necessary number of holes or use dummy wires at least 600 mm (24 in) long.
  - Fully align connectors prior to terminal connection — terminal cavities should have minimum tolerance to prevent terminals from floating, bending or pin push-out during mating/engagement.
  - Make sure connectors of similar type and color are identifiable to the operator to eliminate crossed connections and minimize assembly time. Avoid using similar types and colors of connectors close together.
  - Be sure that connectors have positive locking devices that allow easy installation with a low insertion force and easy removal. The connector snap should be easily felt and heard.
  - Eliminate the use of edgeboard, tang-type and molded-over connectors. The use of blade-type weather-resistant connectors is restricted to high current applications which cannot be handled by submersible connectors.

Circuit Protection and Electrical Load

- Modification to existing vehicle wiring should be done only with caution and careful consideration of effects on the completed vehicle's electrical system. Anticipated circuitry should be studied to determine the required circuit protection and to avoid feedback loops.
- Added circuitry must be protected either by a base vehicle fuse or circuit breaker, or by a similar device supplied by the modifier.

Section 2: Electrical

- When adding loads to a base vehicle-protected circuit, make sure that the total electrical load through the base vehicle fuse or circuit breaker is less than the device's load rating.
- Use 80% of the fuse rating to determine maximum steady state load to reduce nuisance fuse failures.
- Use 135% of the fuse rating when sizing wiring to protect the circuit in the event of an overload. Fuses will last for 1 hour at 135% of their rating.
    - Total current draw is the sum of the base vehicle's circuit current requirement (measured with an ammeter) and the anticipated add-on component current requirements.
    - Never increase the rating of a factory installed fuse or circuit breaker.
    - If the total electrical load including additional electrical components, on any circuit, is less than the fuse protection rating or the capacity of some limiting component (switch, relay), the items to be added can be connected directly to that circuit. The headlamp switch circuits should never have additional lighting or electrical components directly connected.
    - Added devices that exceed the current capabilities of the factory-installed system are best controlled through the use of a relay or separate switch. The coil of the relay can be fed from the circuit in the factory harness (now acting as a signal circuit) with added wiring providing feeds to the added electrical device. The relay selection is important and depends on current requirements, number of cycles expected in the relay lifetime, whether the relay is to be operated intermittently or for long periods of time and whether the relay is exposed to weather conditions or is installed in a protected area. When the current requirements of a circuit exceed the capacity of an available relay, the load should be reduced or divided through the use of additional relays.

Wire Protection Requirements

General Notes:

- Anticipate any potential problems and design accordingly to accommodate. Try to anticipate what could go wrong and modify your designs to address any adverse impact.
- Review all connector applications and electrical systems to determine the need for solder, grease, weather-resistant or sealed connectors. Make sure components and wire insulation are compatible with greased connectors (important for long-term durability).
- Make sure that drip loops or other means are provided to prevent water leakage into the vehicle through wiring assemblies that pass through the dash panel.
- Use greased or sealed connectors in floor pan troughs which are subject to moisture coming through the carpeting.
- Use XLPE insulation for uncovered runs that exceed 305 mm (12 in).

Electrical Protection

- Correctly route wires away from noise-generating wires or components. However, if routing near noisy wires or plugging into noisy components is unavoidable, additional protection must be designed into the harness.
- Shielding — Electro Magnetic Interference (EMI) — Consider shielding if you must route close to high-current or noisy circuits. Use shielded wire and ground one side. Seal all splices in wire assemblies that use bare coaxial shielding (braid or tape) for EMI suppression, and insulate or tape over all shielding ends that terminate near any open connectors. This prevents splice and terminal shorts to the shielding. Minimize the length of conductors which extend beyond the shield. Failure to do this reduces the effectiveness of the shield.
- Spike suppression, in general, is accomplished by connecting a diode or resistor-diode combination across the terminals of the noisy component. The diode should be sufficiently close to the component (both electrically and physically) so that inductive spikes are clamped off. Make sure the diode is connected with the proper polarity.

Proper routing and retention will reduce the likelihood of chafing or pinching. When this ideal routing is unattainable, the following additional protection is needed:

Mechanical/Environmental Protection

- Tape — Tape is the most basic means of protection. It contains the wires in a loose bundle and provides limited environmental protection. It does not protect against chafing and pinching.
    - Kendall Polyken Fiberglass Base Tape (Ford Specification ESB-M3G38-A) is used for engine compartment applications. This durable tape provides against cut-through and abrasion commonly found in underhood applications.
    - Polyken 267 is a substitute tape that may be used in lower temperature areas of the engine compartment (apron area).
- Convolute — Use convolute for all underhood/underbody applications or when increased temperature, abrasion or pinch resistance is required. Convoluted tubing comes in different diameters and materials to accommodate different temperature ranges and harness sizes.
    - Use polyethylene convolute when abrasion is the only consideration; this convolute is adequate up to 96°C (205°F) maximum. Use nylon convolute when underhood/underbody or abrasion and temperature are considerations; nylon convolute is adequate up to 177°C (350°F) maximum.
    - On all engine-mounted wiring or bend points. Use vinyl tape on the outside of the convolute to prevent wiring from looping out. This tape must be able to withstand temperatures 135°C (275°F) or higher.
    - Tape convolute junctions with abrasion-resistant tape (Polyken 267, fiberglass).
- Scroll — Similar to convolute, but without the ridges. Scroll is used where harness rigidity is required, especially for maintaining critical locator dimensions. Use scroll for short lengths only, as it is quite inflexible.

Section 2: Electrical

NOTE:
This is not meant to be an all-inclusive list of methods for physically protecting the wires. There are other means of protection available that are not listed.

Grommets and Sealing Requirements

Any additional wiring routed through sheet metal must pass through a grommet that both seals the opening and locates the wire(s). Two-piece grommets (rubber with plastic inserts) are recommended to facilitate installation and retention.

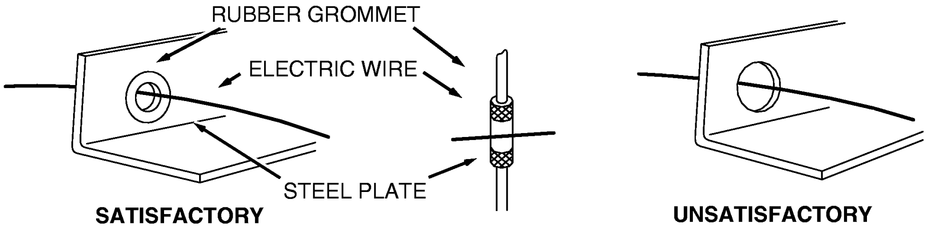
- Locate grommets so they are accessible for proper seating (achieved by pulling) in sheet metal holes.
- Ramp grommets at the insertion end to facilitate installation and sealing.
- Be sure that the direction of the hole punch is in the direction of grommet seating and the hole is burr-free.
- Make sure the grommet moulding compound will adhere to the harness to prevent slippage.
- Make sure the grommet will withstand the environment (temperature, splash).
- Be sure that holes are large enough to allow the installation of the harness without causing circuit damage.
- Use adhesive tape on main trunks or branches with at least a 50% overlap to prevent wicking through grommets. Be certain to diaper-wrap the takeouts.
- **Any and all holes created or existing grommets affected during upfit which are exposed directly or indirectly to outside air MUST be completely sealed using Motorcraft® Seam Sealer (TA-2-B).**

Wire Routing

⚠ **WARNING:**
Do not place electrical component attachments or ground screws adjacent to vehicle fuel tanks, fuel filler pipes, fuel lines, fuel vapor lines or carbon canisters. Failure to follow these instructions may result in personal injury in the event of a collision.

Wire harness routing should conform to the following:

- Protect wires routed through holes in sheet metal or castings with a grommet whether or not conduit is used (see figure below).



• **Cables should not be in contact with sharp edges or pierced holes.**

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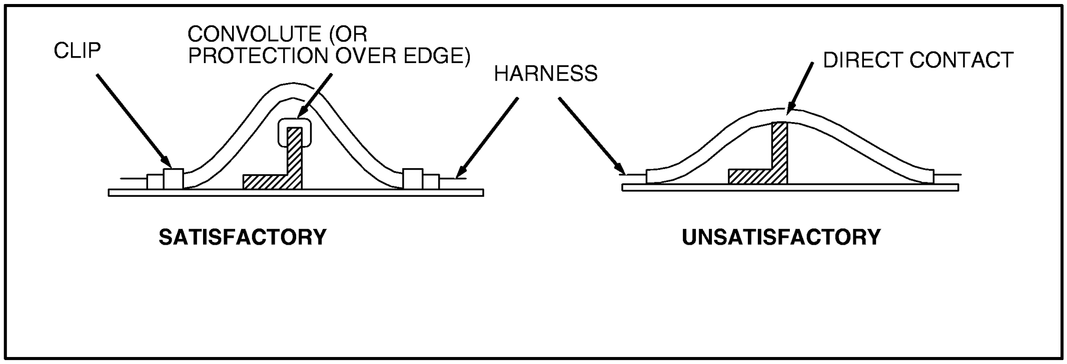
- Route wires to avoid metal edges, screws, trim fasteners and abrasive surfaces. When such routing is not possible, use protective devices (shields, caps) to protect the wires. Cover metal edges with a protective shield and fasten the wiring within 76 mm (3 in) on each side of the edge (see figure below).

Section 2: Electrical



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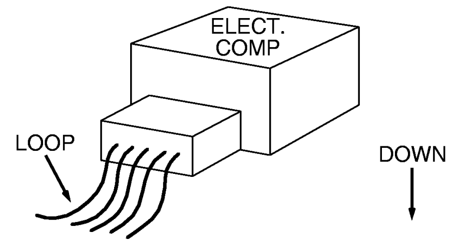
- Route wires to provide at least 76 mm (3 in) of clearance to moving parts in their extreme movement location, unless positively fastened and protected by a conduit.
- Avoid wire routing without conduit in areas where temperatures exceed 82°C (180°F). Minimum clearance of 152 mm (6 in) should be maintained from exhaust system components. Heat insulation and heat shields must be used on the wires routed in high-temperature areas.
- Make certain that all underhood or underbody wiring is cross-linked polyethylene high temperature insulation wire 135°C (275°F) (minimum rating) consistent with SAE specification J1128 Type SXL wire. Normal PVC wire must not be used in underhood or underbody applications.
- Make sure all ground locations are readily accessible for installation, service and verification.
- Do not place ground attachments in high-splash areas.
- Do not route underbody wiring over the exhaust system.
- Under hood/underbody wiring must be routed in conduit for protection. Minimum conduit rating is 177°C (350°F).

Wire Retention and Routing

Use the following criteria to determine the location of retainers:

- Size and weight of wire bundle.
- Holes with poor accessibility that prevent installation of locators.
- Movement of wires that can result in abrasion, squeaks and rattles.

- When wiring is routed between 2 members where relative motion can occur, the wiring should be secured to each member with enough wire slack to allow flexing without damaging the wire.
- Wiring exposed to weather must provide a drip loop to prevent moisture from being conducted into the device through the wire connection (see figure below).



• Drip loops should be provided at connectors and grommets to direct water away from terminals or inside the vehicle.

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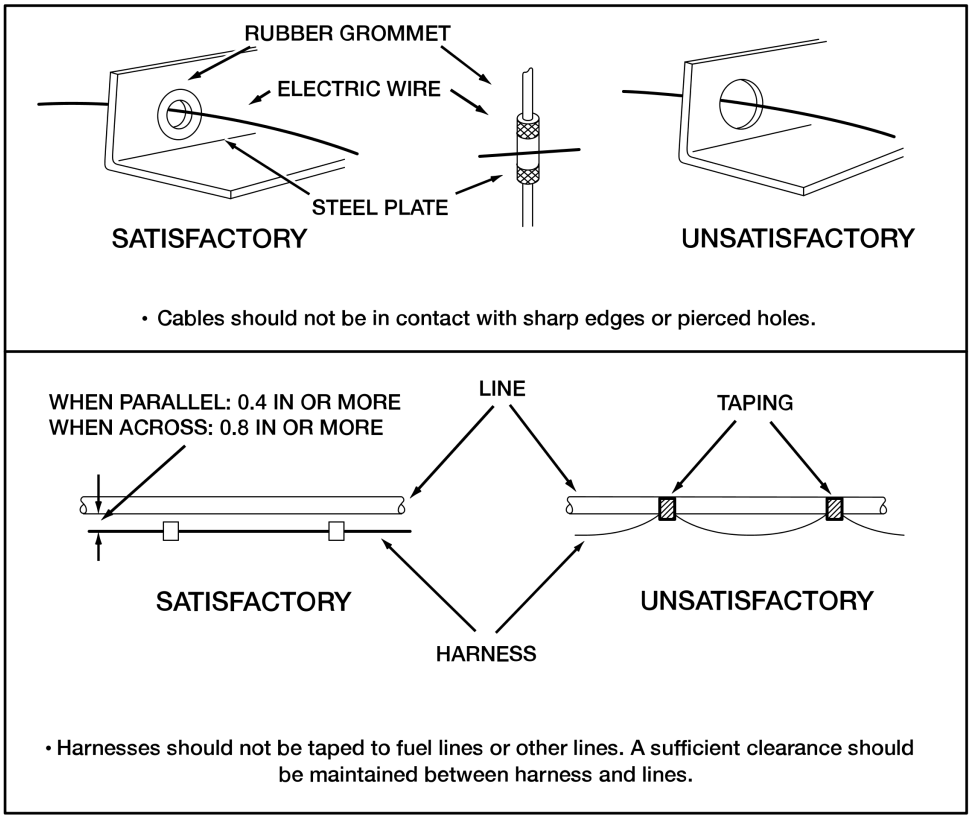
- Avoid routing wires into areas exposed to wheel splash. When such routing cannot be avoided, adequate clipping and/or protective shields are required to protect the wires from stone and ice damage. Allow adequate slack in wiring between the engine and stationary components to compensate for engine roll.
- Avoid routing wires under the frame side members or at points lower than the bottom frame flange.

Section 2: Electrical

- Use plastic "zip" straps for "bundling" only (securing to other wires).
- The wire retainers and grommets installed by the assembly plant are usually designed to accommodate only the Ford-installed wires. Additional wiring or tubing should be retained by additional clips. When added wires or tubes are routed through sheet metal panels, new holes with proper wire protection and sealing must be used.



• Cables should not be in contact with sharp edges or pierced holes.

• Harnesses should not be taped to fuel lines or other lines. A sufficient clearance should be maintained between harness and lines.

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For retainer screws, the following guidelines apply:

- Avoid using fasteners that are too long for the application or are in an area which might damage vehicle components, including wiring, brake lines, fuel tank and lines, powertrain components, exhaust system and suspension.
- Do not use pointed screws for attachments. Also check that screws used in the vicinity of the wiring are blunt-ended.
- To minimize the potential for wiring shorts, do not use drill point screws. Trim components (including wiring shields) should use pin-type attachments instead of screws.
- Always check areas that screws protrude into for verification that an interference condition to other components does not exist.
- Make sure that retainers used are capable of withstanding the environment over the vehicle's life expectancy.

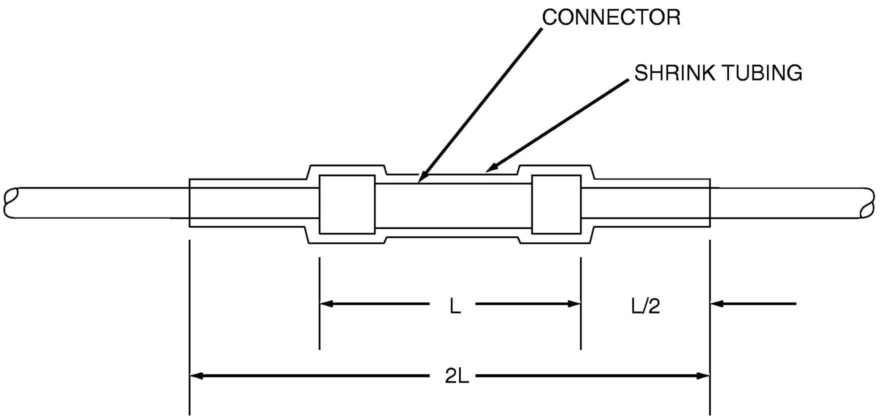
Splices and Repairs

For quality splicing and to reduce potential problems, the following guidelines are recommended:

- Stagger the splices within a harness to reduce increased harness diameter. Splice only on straight areas as installed, not on bends.
- Strip wire ends making sure that individual conductor strands are not damaged.
- When soldering, make sure an adequate mechanical joint exists before applying solder. Use only resin-core solder. Acid-core solder should not be used since it may result in corrosion.
- For crimp joints, use butt-type metal barrel fasteners and the proper tool at the appropriate setting for the wire size (such as Motorcraft crimp tool S-9796) specifically designed for this type of work.

Section 2: Electrical

- Make sure splice joints are adequately sealed and insulated. In an outside environment, use Duraseal butt connectors or equivalent. A durable substitute splice joint can be achieved by using a bare metal barrel, crimping, flow-soldering and covering with shrink tubing. Quality electrical tape can be used inside the vehicle but is not recommended for an outside environment.
- Be sure that the new wire is not a lesser gauge than its original mating wire.



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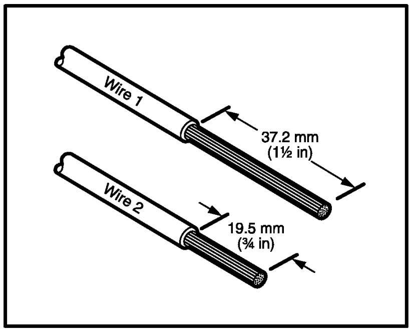
Recommended Splicing Method — Solder (For 16 AWG and Smaller Diameter Wire Only)

1. Disconnect the battery ground cable.
2. Strip wires to appropriate length.



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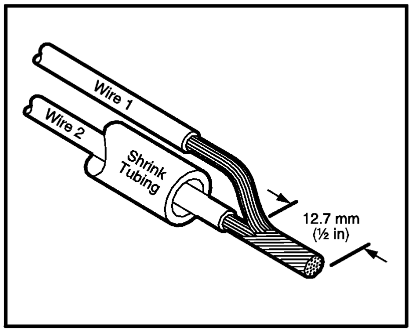
3. Install heat shrink tubing.
4. Twist the wires together.
5. **NOTE:**
   Use resin-core mildly-activated (RMA) solder. Do not use acid-core solder.

   Solder wires together.

Section 2: Electrical


Wire 1
Wire 2
Shrink Tubing
12.7 mm (½ in)

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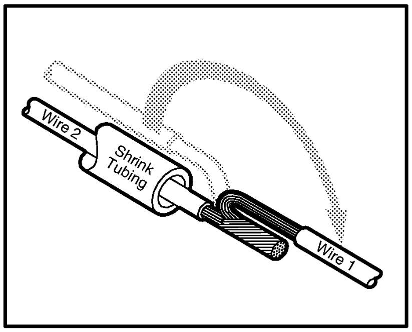
6. **NOTE:**
   Wait for solder to cool before moving wires.

   Bend wire 1 back in a straight line.


Wire 2
Shrink Tubing
Wire 1

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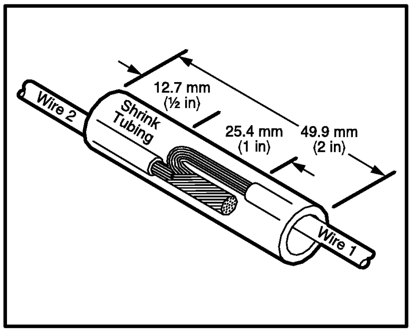
7. **NOTE:**
   Overlap tubing on both wires.

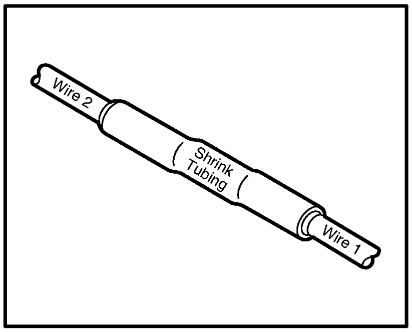
   Evenly position heat shrink tubing over wire repair.


12.7 mm (½ in)
25.4 mm (1 in)
49.9 mm (2 in)
Wire 2
Shrink Tubing
Wire 1

A0075764

8. Use a shielded heat gun to heat the repaired area until adhesive flows out of both ends of the heat shrink tubing.

Section 2: Electrical



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9. Reconnect the battery ground cable.

Sealed Connectors

Ford Part Number	Part Name	Class
E6FZ-14488-A	Butt Connector Gauge: 18-22, Color: Red	C
E6FZ-14488-B	Butt Connector Gauge: 14-16, Color: Blue	C
E6FZ-14488-C	Butt Connector Gauge: 10-12, Color: Yellow	C

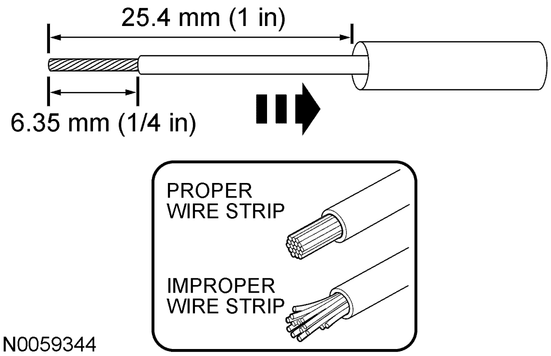
Heat Shrinkable Tubing (Heat Shrink) (Ford Specification ESB-M99D56-A2)

Heat shrinkable tubing is available in various diameters for different splice sizes and configurations. When shrunk, it forms a small, flexible hermetic seal.

Other methods (tape, PVC mold) do not provide a hermetic seal and are not recommended. Splice balancing is critical with heat shrink insulation. If the splice is extremely unbalanced (more circuits on one side than the other), heat shrink insulation will not provide a proper seal. Evaluate the use of double terminals instead of splices where practical in these situations.

Recommended Splicing Method — Crimp (For 10–22 AWG Diameter Wire to Like Wire Diameter)

1. Disconnect the battery ground cable.
2. Strip wires to appropriate length.
3. Install heat shrink tubing.



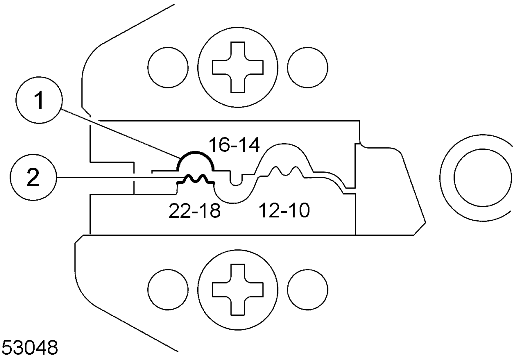
N0059344

4. Select the appropriate wire slice for the wires to be spliced from Rotunda Wire Splice Kit 164-R5903.
5. **NOTE:**

Section 2: Electrical

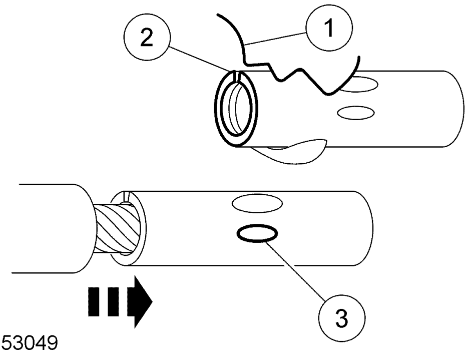
Rotunda 164-R5901 Pro-Crimper supplied with the wire splice kit is the only tool that can be used with these splices.

Identify the appropriate chamber on the Rotunda Pro-Crimper by matching the wire size on the dies with the wire size stamped on the butt splice.
(1) Cavity
(2) Indenter



N0053048

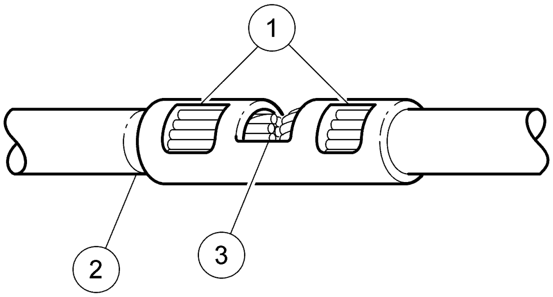
6. Crimp the connector.
   (1) Center one end of the wire splice in the appropriate crimping chamber.
   (2) Insert stripped wire into the barrel.
   (3) Holding the wire in place, squeeze the tool handles until ratchet releases.



N0053049

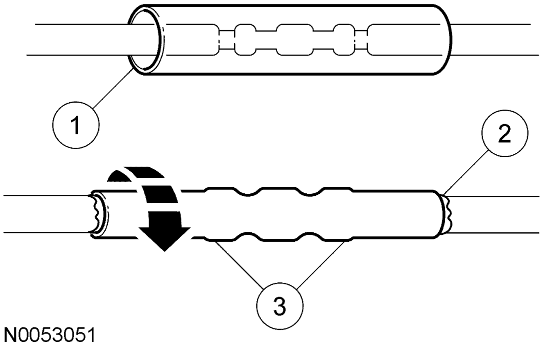
7. Repeating Step 6, crimp the other half of the splice.
8. Check for acceptable crimp.
   (1) Crimp should be centered on each end of the butt splice.
   (2) Wire insulation does not enter butt splice.
   (3) Wire is visible through inspection hole of splices.

Section 2: Electrical



N0053050

9. Evenly position supplied heat shrink tubing over wire repair.
10. Use a shielded heat gun to heat the repaired area until adhesive flows out of both ends of the heat shrink tubing.



N0053051

11. Reconnect the battery ground cable.

Heat Shrinkable Tubing (Heat Shrink) (Ford Specification ESB-M99D56-A2)

Heat shrinkable tubing is available in various diameters for different splice sizes and configurations. When shrunk, it forms a small, flexible hermetic seal.

Other methods (tape, PVC mold) do not provide a hermetic seal and are not recommended. Splice balancing is critical with heat shrink insulation. If the splice is extremely unbalanced (more circuits on one side than the other), heat shrink insulation will not provide a proper seal. Evaluate the use of double terminals instead of splices where practical in these situations.

Electrical Systems Management

Care must be given in deciding what equipment should be installed into a police vehicle given the power demands of the equipment and the power available from the vehicle. A power load strategy should be developed to minimize the risk of running out of power. Examine the proposed equipment for vehicle installation. Add up the current requirements. If the current requirements exceed what the vehicle can reasonably be expected to be able to provide, the battery will begin discharging to provide the power to the equipment that the generator is unable to provide. After some period of time, the vehicle will shut off as the battery voltage decreases to a level that cannot sustain vehicle operation.

There are alternatives that can be considered to minimize system electrical overload. Consider the current requirements of equipment before it is purchased and installed. Modern light bars and radios use a fraction of the current than units made as recently as 1996. As the light bar is the most power intensive unit installed on most police vehicles, considerable attention should be given to its current requirements. Changes in officer habits while in the field can make a difference as well. When a vehicle is sitting at an accident scene and no one is in the car, the air conditioner can be turned off until the officer is ready to get back into the vehicle. The air conditioner is among the largest current users of non-police equipment. As such, it can impact available power for other uses as well.

Alternator Output

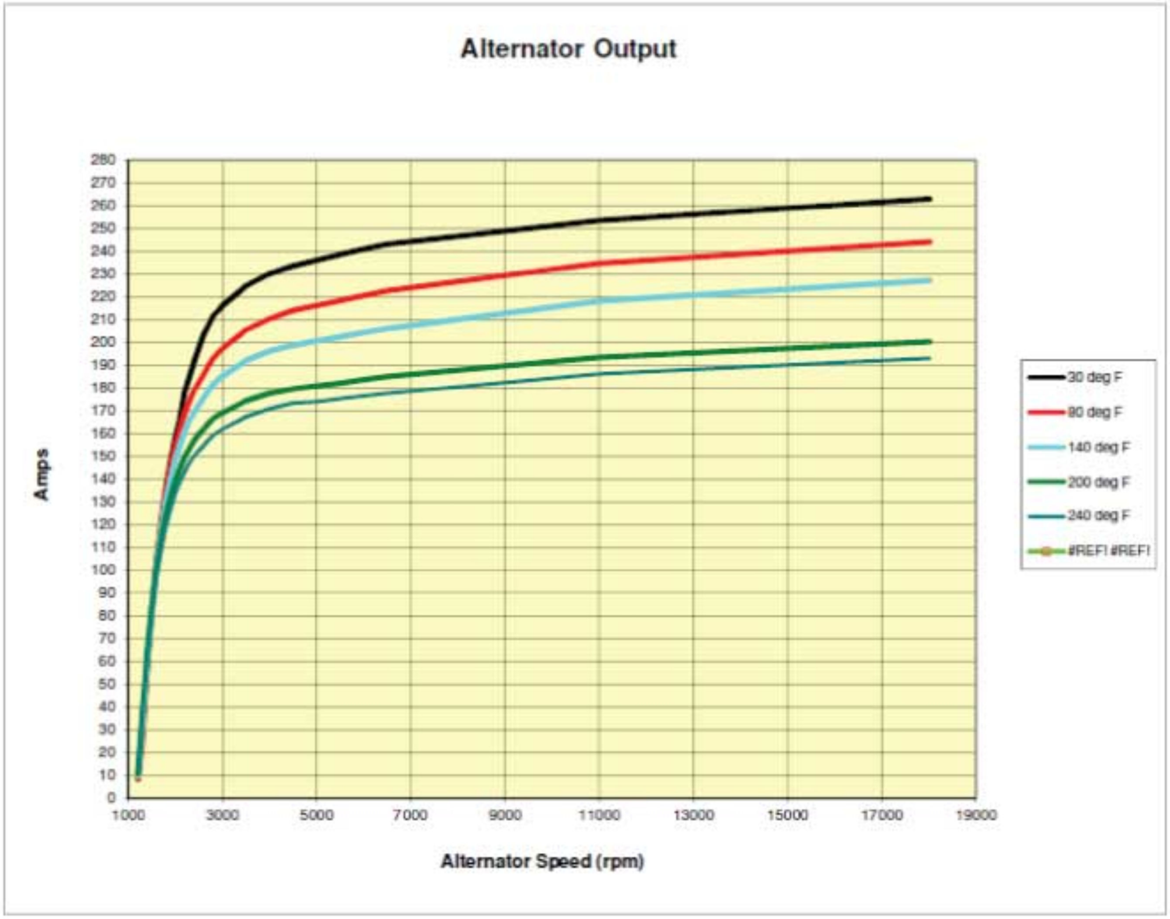
On 2013 Sedan and Utility Police Interceptors, the alternator is controlled by the PCM.

Section 2: Electrical

The Police Interceptor alternator is different from that used on the standard retail vehicles. The Police Interceptor has a 220 amp alternator. This results in significantly greater current output, especially at idle, where police vehicles need it most.

- Alternator amp output:
  - Maximum output for the Police Interceptor is 220 amps
- Alternator drive ratio, determined by generator pulley size:
  - Sedan Police Interceptor 2.67:1
  - Utility Police Interceptor 2.67:1
- Idle speed:
  - Police Interceptor 600 rpm

NOTE:
In order to calculate engine rpm from the graph below, divide the alternator speed by 2.67 (or 3 as an approximate). Alternator speed/3.0 = engine rpm.



N0140614

Charging Margins

Alternator output varies with engine speed and ambient temperature as illustrated in the Alternator Output Section. The worst case scenario for police vehicles is when the vehicle is idling for long periods of time on a very hot day. Lower engine speeds while idling, coupled with high under hood temperatures that may approach 93°C (200°F), combine to minimize power output from the generator. At the same time, electrical demand on the vehicle is often at its highest because the air conditioner loads are added to the usual electrical loads experienced in emergency situations.

Vehicle Component Electrical Loads

Vehicle component electrical loads are shown in the table below. Not all features are powered all the time, so actual vehicle loads on the power supply system will vary.

Component	Amps
Base	
Miscellaneous Base Loads	19.1A
Cooling	
Cooling Fan (variable speed)	48A High Speed 12A Low Speed
Climate Control	
A/C Clutch	3.5A
A/C Fan-to-Face — High Speed (recirculating air)	18.9A
A/C Fan-to-Face — Medium/High Speed (recirculating air)	15.2A
Heater Fan-to-Foot — Medium/High Speed (fresh air)	13.9A
Lighting	
Exterior and Instrument Panel Lamps (non-dimmable)	3.2
Headlamps — Low Beam	Part of Police Load
Headlamps — High Beam (incremental)	Part of Police Load
Brake Lights (with High Mount Stop Lamp)	3.3A
Heated Features	
Heated Rear Window (includes heated mirrors)	26A
Other	
Radio	2.4A
Wiper Speed 1 (low)	2.3A
EPAS	70A (13% sized for CLCC)
Police Load	65A (80% sized for CLCC)
Typical Vehicle Load = 60-70 Amps	

NOTE:
Cooling and Climate Fan sizing measured from wind tunnel data (at the ambient temperatures of 110°F for AC and 30°F for Heat).

NOTE:
Police Load includes all lighting except for Exterior and IP lights. Police vehicles we measured had higher worse case lighting loads operated in wig/wag - strobe version than baseline. For CLCC, we assume 80% duty cycle throughout the three drive cycles. For EPAS sizing, it is assumed 100%.

NOTE:
EPAS peak load is 70A, for CLCC max duty cycle is 13%, for EPAS it is again 100%.

Typical Police Equipment

Loads for equipment commonly found on police vehicles are shown in the table below. Not all equipment will be operating at the same time, so actual loads on the power supply system will vary.

Section 2: Electrical

Component	Amps
Communications Radio	4.0 (9.0 w/mic active)
Mobile Data Transmitter	3.0
Light Bar	28-43
Light Bar with All Internal Accessory Lights Activated	36-63
Spot Lights (each)	7.8
Alley Lights (each)	1.0
Radar	0.8
Digital Video	0.5

PCM — Red Area

NOTICE:
DO NOT make electrical connections to vehicle electrical systems not specifically designed for police equipment installations.

Do not install any components into the PCM or PCM harness. Connecting into this system may affect engine and transmission operation. Vehicle speed output available in 14-way connector at base of center stack see Chapter 2 Section 28 for Front Power Access and Signals for pinout. For example: connection of aftermarket electrical equipment into the brake light circuit or any other circuit which is connected to the PCM, anti-lock brake computer, air bag system or any other vehicle system will cause vehicle malfunction.

Headlight and Tail Light Modifications

NOTICE:
To prevent current spike damage to the Body Control Module (BCM), do not splice into any lighting circuits

Headlight Flashers (Wig-wag)

NOTE:
It is recommended that wig-wag function is accomplished through a dedicated solution. Ford offers a high-output durable LED based solution that combines wig-wag, turn signal, and park lights.

Tail Light/Brake Light Flashers (Wig-wag)

Adding tail light flashers (wig-wag) to the brake light circuit requires that the splice location is inside the trunk area. Splicing into the brake light circuit at any other location will cause critical systems on the vehicle to malfunction. Circuit protection devices have been added to the vehicle to accommodate tail light flashers. These protection devices will only be effective if the tail light flasher (wig-wag) module is spliced into the section of the brake light circuit that is in the trunk area.

Disabling Brake Lights

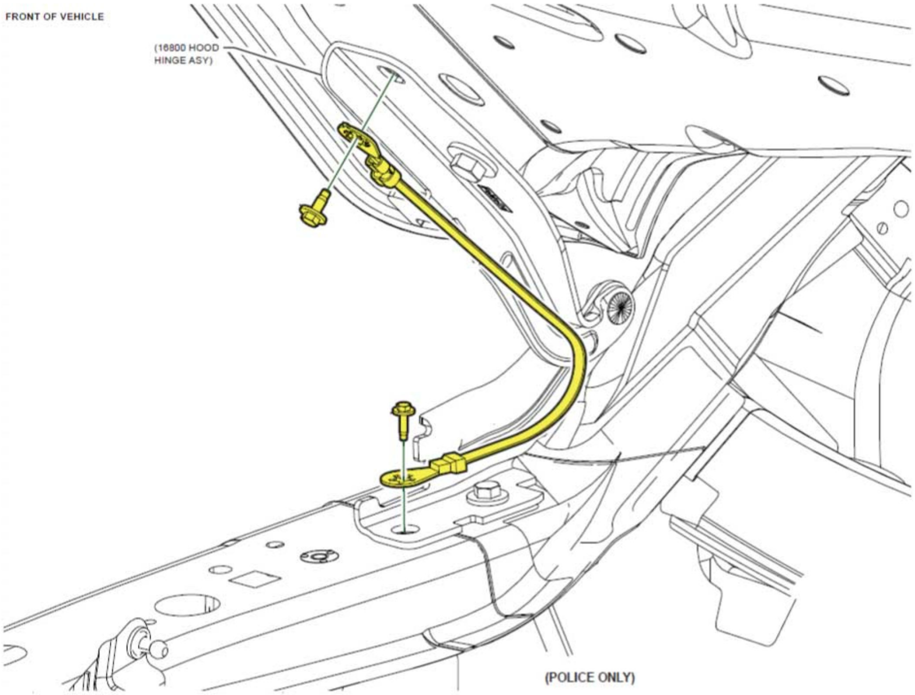
Do not disable the brake light circuits for any reason. For additional information, refer to Section 2: General Information in this guide.

Brake Applied Signal

For brake output circuit see 14-way connector pin 8 in BU5T-14A459-BA located at bottom of instrument panel above driveline tunnel between front seats. For access to this connector, remove valence panel per process in Chapter 2 Front Power Access and Vehicle Signals.

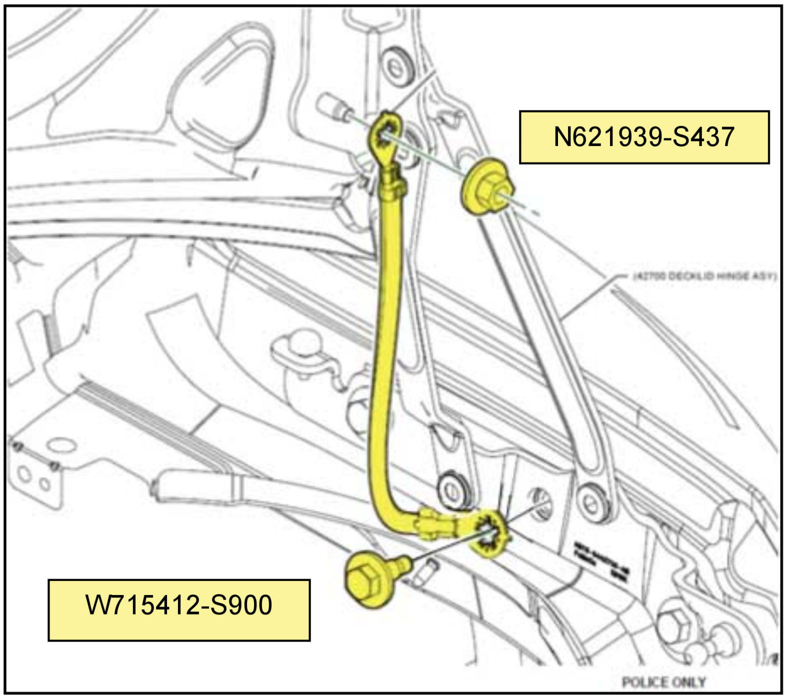
Section 2: Electrical

Sedan Interceptor - Front Ground Strap - Passenger Side Hood


FRONT OF VEHICLE
(16800 HOOD HINGE ASY)
(POLICE ONLY)

N0140615

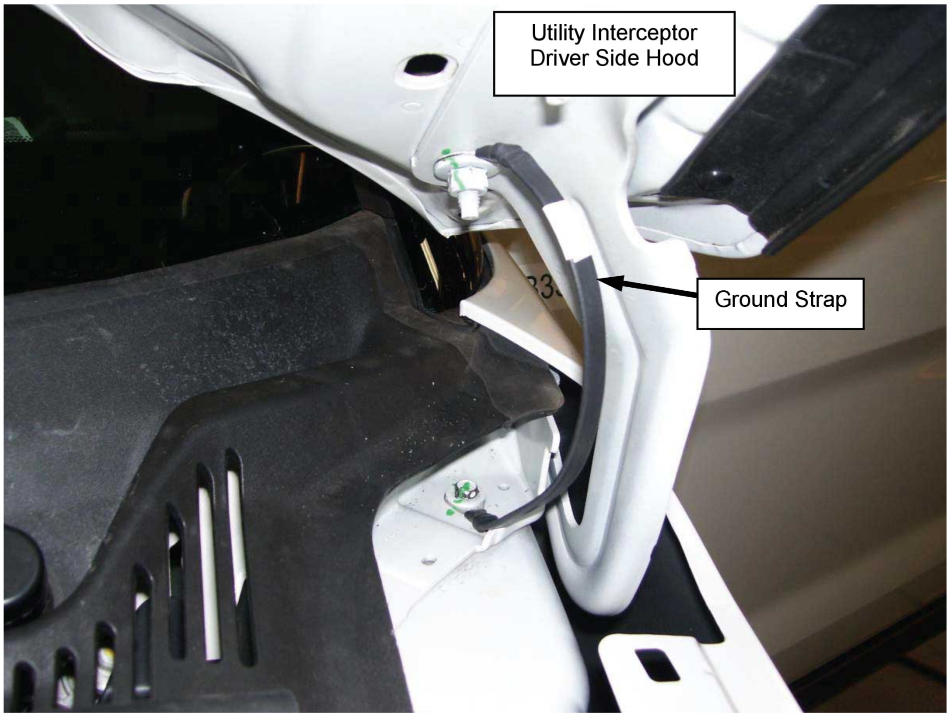
Sedan Interceptor - Trunk Lid Strap - Passenger Side


N621939-S437
(42700 DECKLID HINGE ASY)
W715412-S900
POLICE ONLY

N0140616

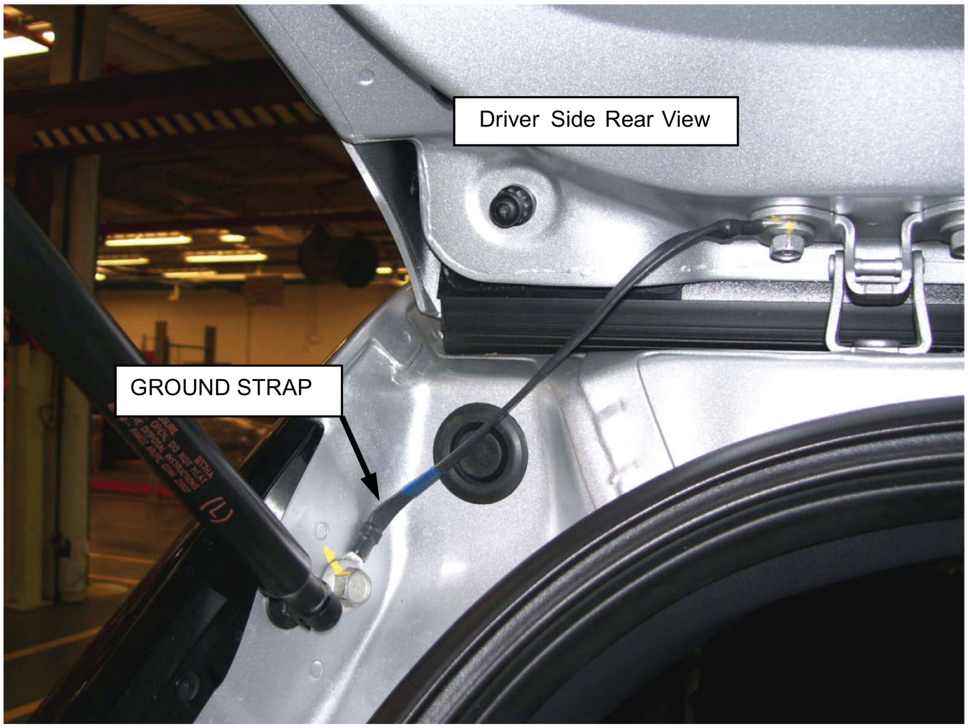
Section 2: Electrical

Utility Interceptor - Front Ground Strap - Passenger Side Hood


Utility Interceptor
Driver Side Hood
Ground Strap

N0140617

Utility Interceptor - Liftgate - Driver Side


Driver Side Rear View
GROUND STRAP

N0140618

Section 2: Electrical

Regular Production Options (RPO)

Product Information see: www.fordpoliceinterceptor.com

Siren/Speaker

NOTICE:
Exposure to loud sounds can damage hearing. Hearing by those inside or outside in near proximity of the vehicle can be damaged. Hearing protection should always be used with exposure to sirens and horns. Sirens and horns should not be turned on indoors that will expose yourself or others to the sound generated. Refer to federal, state, and or local recommendations for requirements applicable to your area. Guidance is provided in OSHA Standard 1910.95 under "Permissible Noise Exposure".

- Exposure to sounds produced by typical sirens and horns (near or greater than 120 dB) could result in permanent hearing loss.
- Certain packages for both the Sedan and Utility Police Interceptors include system designed siren amplifiers and speakers. Using a siren and/or speaker(s) from other manufacturers may reduce the output, the overall warning effectiveness of the siren system and possibly cause reduced component useful life. Your system should be tested to conform to federal, state, and local performance standards. Packages for the Sedan and Utility Police Interceptors are tested to SAE J1849, 500 feet audibility, OSHA Sound Compliance Standards and have been salt spray tested for corrosion and durability.
- Adhere to all Ford Police Interceptor Modifier Guide, Owners Manual, diagnostic manual safety and precaution procedures when servicing or relocating the vehicle or warning system.
- Loud sounds can damage your hearing as well as others in or within close proximity to your emergency vehicle. Exposure to very loud sounds in short duration or longer duration to moderately loud sounds can also damage hearing. For hearing conservation guidance, refer to federal, state, or local recommendations. OSHA Standard 1910.95 provides guidance on "Permissible Noise Exposure"
- Effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your and others' exposure to siren sound and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound.
- Siren amplifiers and speakers are designed to work together as a system. Combining a siren and speaker from different manufacturers may reduce the warning effectiveness of the siren system and may damage the components. You should verify or test your combination to make sure the system works together properly and meets federal, state and local standards or guidelines. The factory installed components are tested and verified to support SAE J1849, 500 ft. Audibility, OSHA Sound Compliance Standards, and have been salt spray tested for durability.
- Frequently inspect the speaker to ensure it is clear of any obstruction, such as mud or snow, which will reduce maximum sound output and could lead to premature speaker failure.
- Follow all safety and precautions procedures in the Ford Police Interceptors Modifier Guide, Owners Manuals and diagnostic manuals when servicing or moving this equipment.

NOTICE:
The lives of people depend on your safe operation of this system. It is important to read and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

Signaling Limitations

- Be aware that the use of your visual and audible signaling device does not give you the right to force your way through traffic. Your emergency lights, siren, and actions are REQUESTING the right-of-way.
- Although your warning system is operating properly, it may not alert everyone. People may not hear, see or heed warning signal. Your must recognize this fact and continue driving cautiously.
- Situations may occur which obstruct your warning signal when natural or man made objects are between your vehicle and others.

Driving Limitations

- At the start of your shift, you should make sure that the light/sound system is securely attached to the vehicle and operating properly.
- If the unique combination of emergency vehicle equipment installed in your vehicle has resulted in the siren controls being installed in a position that does not allow you to operate them by touch only, OPERATE CONTROLS ONLY WHILE YOUR VEHICLE IS STOPPED.
- If driving conditions require your full attention, you should avoid operating the siren controls while the vehicle is in motion.
- File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to new recruits and trainees.
- Failure to follow these safety precautions may result in property damage, serious injury, or death to you, to passengers, or to others.

Configuration Instructions

The factory installed system is an extremely versatile electronic siren and light control system. Available siren tones are: wail, yelp, priority, hi-lo and an air horn sound. Horn ring control of siren tones is provided. Public address and radio rebroadcast are also available. Eight relays are available for controlling light bars, other auxiliary lights and accessories.

Section 2: Electrical

For operations and configuration instructions, refer to the corresponding section of this manual.

⚠ **WARNING:**
Property damage, serious injury, or death to you or to others may result if the factory installed system is improperly programmed.

Programming, if desired by the police agency, is to be performed at the time of installation. It is NOT intended for operators to "customize" the unit's operation for their individual preferences. It is the police agencies' responsibility to determine compatibility, suitability, and ensure proper programming of the factory installed system.

The person responsible for programming MUST be familiar with local codes and procedures for safe emergency vehicle siren and light operation.

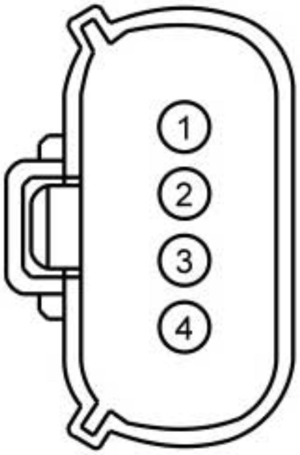
- Since many factory installed features are programmable, operation is described for the "Standard" program. Refer to the supplied Operation and Configuration section of this manual for additional discussion of the "standard" program. It is the operator's responsibility to understand how his particular unit is configured (programmed) to operate.
- The factory installed key pad is designed to assist the operator's selection of functions. Each control head switch is recessed and aids in guiding the operator's finger to the switch's center for activation. When a switch is pressed, tactile feedback provides function selection indication as follows: a click is felt, a beep is heard, and the selected function's key illuminates brightly.

Individual LED Flash Pattern Programming

⚠ **WARNING:**
Police Package warning lights are a high-intensity Light-Emitting Diode (LED) type. Do not stare directly at these lights, as doing so may cause temporary blindness and/or eye damage. Failure to follow this instruction may result in personal injury.

NOTE:
When cycling through flash patterns, most flash patterns include an off/on pattern followed by an inverse on/off pattern. Setting the LED on one side to the on/off and the other to off/on creates the alternating pattern effect which should not be confused with synchronization which applies to the pattern timing between LED groups. For proper synchronization, the correct flash patterns must be selected for the individual flashing LEDs. Refer to the Explorer, Taurus Police Interceptor Modifier Guide for specific flashing LED patterns.

1. Disconnect the flashing LED to be programmed.
2. Connect ground to pin 4, component side of the flashing LED.



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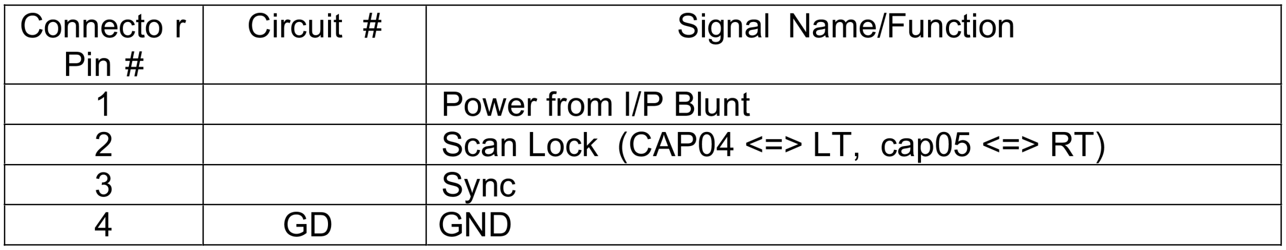
Section 2: Electrical



Connecto r Pin #	Circuit #	Signal Name/Function
1		Power from I/P Blunt
2		Scan Lock (CAP04 <=> LT, cap05 <=> RT)
3		Sync
4	GD	GND

N0141106

NOTICE:
This step will activate the individual flashing LED. The flashing LED must be active to change the flash pattern.

3. Connect 12 volts to pin 1, component side of the flashing LED.
4. Change the flashing LED flash pattern:

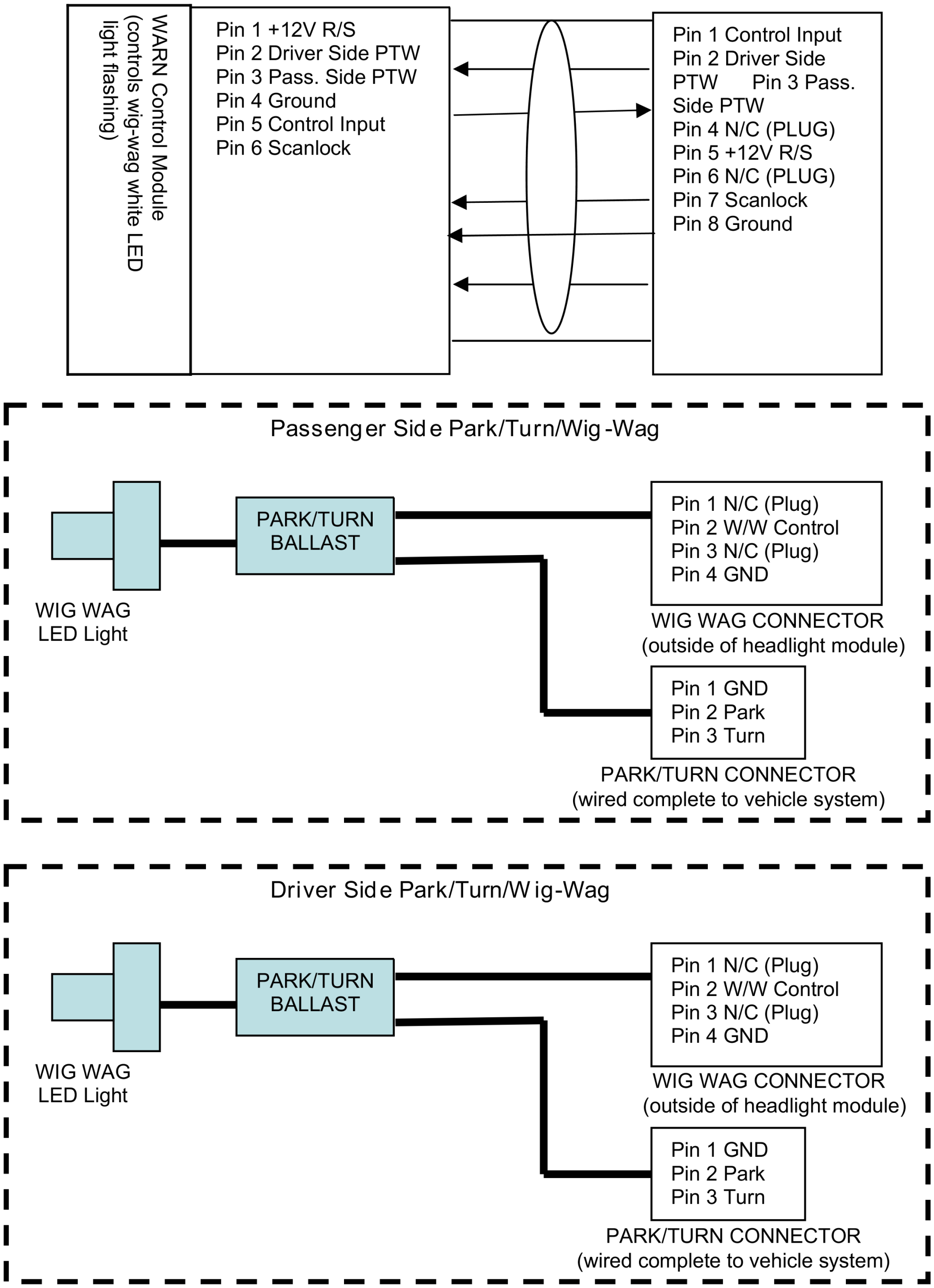
- To cycle forward to the next pattern, connect 12 volts to pin 2, component side of the flashing LED for less than 1 second.
- To cycle back to the previous pattern, connect 12 volts to pin 2, component side of the flashing LED for greater than 1 second.

Sedan/Utility Interceptor Wig-Wag

WARN Control Module controls the wig-wag (white LED lights in headlight module) alternating flash.

- With full OEM wire harness, no further wiring is required for wig-wag function. The amber turn signal/Park function is wired complete into the vehicle harness and will function without additional wiring.
- Without full OEM wire harness, upfit wiring is required to connect the control circuit, WARN control module and white LED wig-wag light pigtail for wig-wag function. The amber turn signal/Park function is wired complete into the vehicle harness and will function without additional wiring.

Section 2: Electrical


WARN Control Module
(controls wig-wag white LED light flashing)
Pin 1 +12V R/S
Pin 2 Driver Side PTW
Pin 3 Pass. Side PTW
Pin 4 Ground
Pin 5 Control Input
Pin 6 Scanlock
Pin 1 Control Input
Pin 2 Driver Side PTW
Pin 3 Pass. Side PTW
Pin 4 N/C (PLUG)
Pin 5 +12V R/S
Pin 6 N/C (PLUG)
Pin 7 Scanlock
Pin 8 Ground
Passenger Side Park/Turn/Wig-Wag
WIG WAG LED Light
PARK/TURN BALLAST
Pin 1 N/C (Plug)
Pin 2 W/W Control
Pin 3 N/C (Plug)
Pin 4 GND
WIG WAG CONNECTOR (outside of headlight module)
Pin 1 GND
Pin 2 Park
Pin 3 Turn
PARK/TURN CONNECTOR (wired complete to vehicle system)
Driver Side Park/Turn/Wig-Wag
WIG WAG LED Light
PARK/TURN BALLAST
Pin 1 N/C (Plug)
Pin 2 W/W Control
Pin 3 N/C (Plug)
Pin 4 GND
WIG WAG CONNECTOR (outside of headlight module)
Pin 1 GND
Pin 2 Park
Pin 3 Turn
PARK/TURN CONNECTOR (wired complete to vehicle system)

N0146596

Group LED Flash Pattern Programming

NOTE:

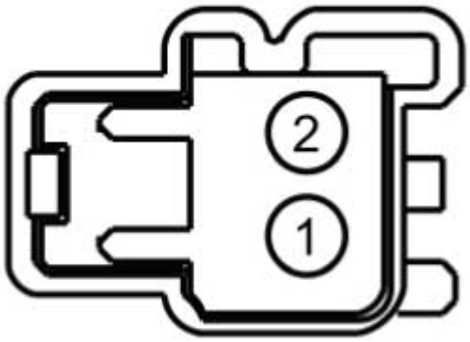
When cycling through flash patterns, most flash patterns include an off/on pattern followed by an inverse on/off pattern. Setting the LED on one side to the on/off and the other to off/on creates the alternating pattern effect which should not be confused with synchronization which

Section 2: Electrical

applies to the pattern timing between LED groups. For proper synchronization, the correct flash patterns must be selected for the individual flashing LEDs. Refer to the Explorer, Taurus Police Interceptor Modifier Guide for specific flashing LED patterns.

1. Activate the flashing LEDs in the group to be programmed.
2. Locate the pattern programming circuits at in-line C4231. To change the flashing pattern:

- Sedan - Connector C4231 located right side of trunk
- Utility - Connector C4231 located in the left rear corner of the vehicle near floor.



N0146096

3. For park/turn/warn, grille, front corner and tail lamp flashing LEDs:

- To cycle forward to the next pattern, connect 12 volts to pin 2 of in-line C4231 for less than 1 second.
- To cycle back to the previous pattern, connect 12 volts to pin 2 of in-line C4231 for greater than 1 second.

4. For high mount and deck lid flashing LEDs:

- To cycle forward to the next pattern, connect 12 volts to pin 1 of in-line C4231 for less than 1 second.
- To cycle back to the previous pattern, connect 12 volts to pin 1 of in-line C4231 for greater than 1 second.

New Utility Police Interceptor OPTIONAL Rear Door Release

This new option for the 2017 model year (MY) Utility Police Interceptor (Option 18D - Global Unlock) provides a choice to have same rear cargo release strategy available from 2013MY through 2015MY. Global Unlock (Option 18D) unlocks the rear cargo door when the 4 vehicle doors are unlocked. With the 4 doors unlocked, the rear cargo door can be opened using the pushbutton on the exterior of the rear cargo door.

Utility - Standard Feature On Utility Police Interceptor Rear Cargo Door Release

The independent liftgate locking feature provides a means to enable and disable the liftgate to be opened/released using the external liftgate release switch on the liftgate.

Switch the ignition to the run, start or accessory position. Pull and release the liftgate control on the overhead console.

NOTE:
Only the liftgate unlocks. All the other passenger doors remain in the previous locking state.

A warning lamp illuminates in the instrument cluster for 45 seconds. You can then open the liftgate using the exterior release button.

Once the 45 second timer expires, the lamp turns off and you can no longer open the liftgate. Pull and release the liftgate control on the overhead console again to restart the timer.

NOTE:
You can also unlock the liftgate by using the key blade inserted into the liftgate lock cylinder.

The liftgate locks when any of the following occur:

- You open and close the liftgate after you pull and release the liftgate control on the overhead console.
- The 45 second timer expires.

Section 2: Electrical

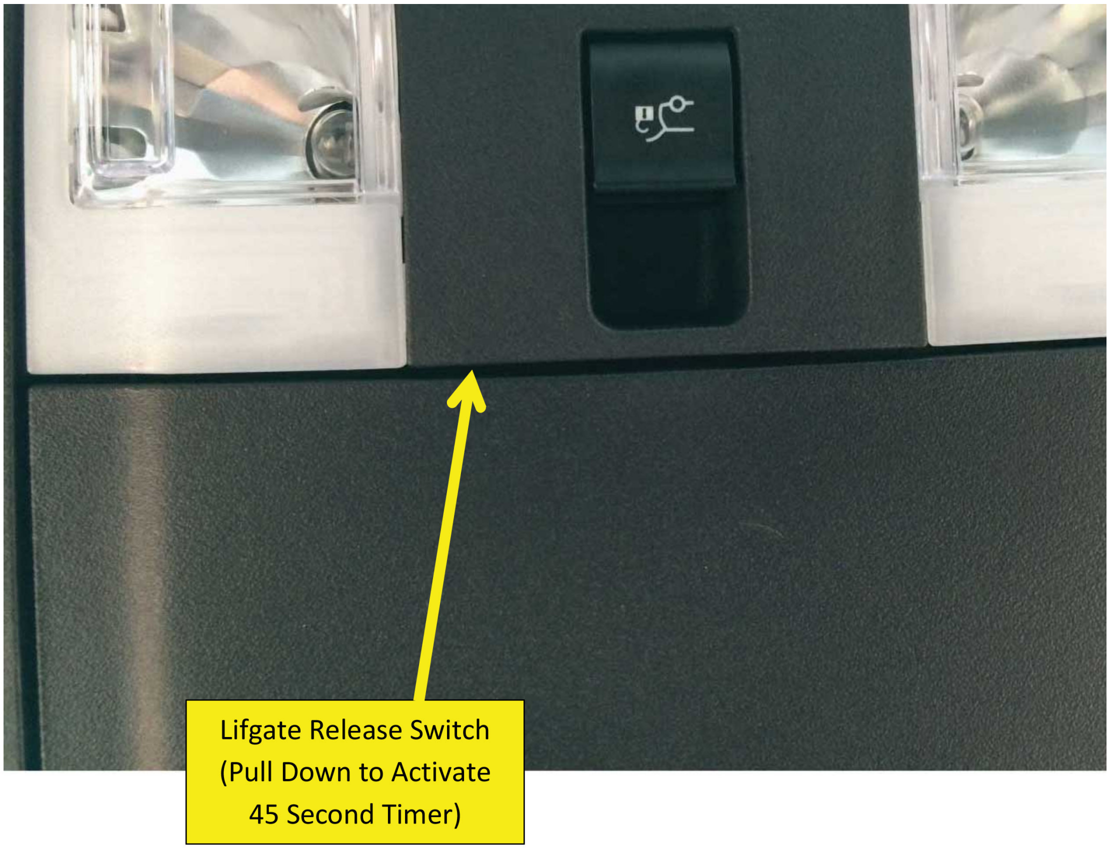
Opening The Liftgate With The Key FOB Liftgate Button (if Equipped)

Press the button to unlock the liftgate. The liftgate unlocks for 45 seconds, during which time you can open the liftgate using the exterior liftgate release button.

NOTE:
Only the liftgate unlocks. All the other passenger doors remain in the previous locking state.

NOTE:
If you do not open the liftgate within 45 seconds of unlocking it, the liftgate locks again. Press the button on the remote control or use the key blade inserted into the liftgate lock cylinder to unlock the liftgate again.

NOTE:
The liftgate does not unlock when you unlock all the doors using the remote control or power door lock control.



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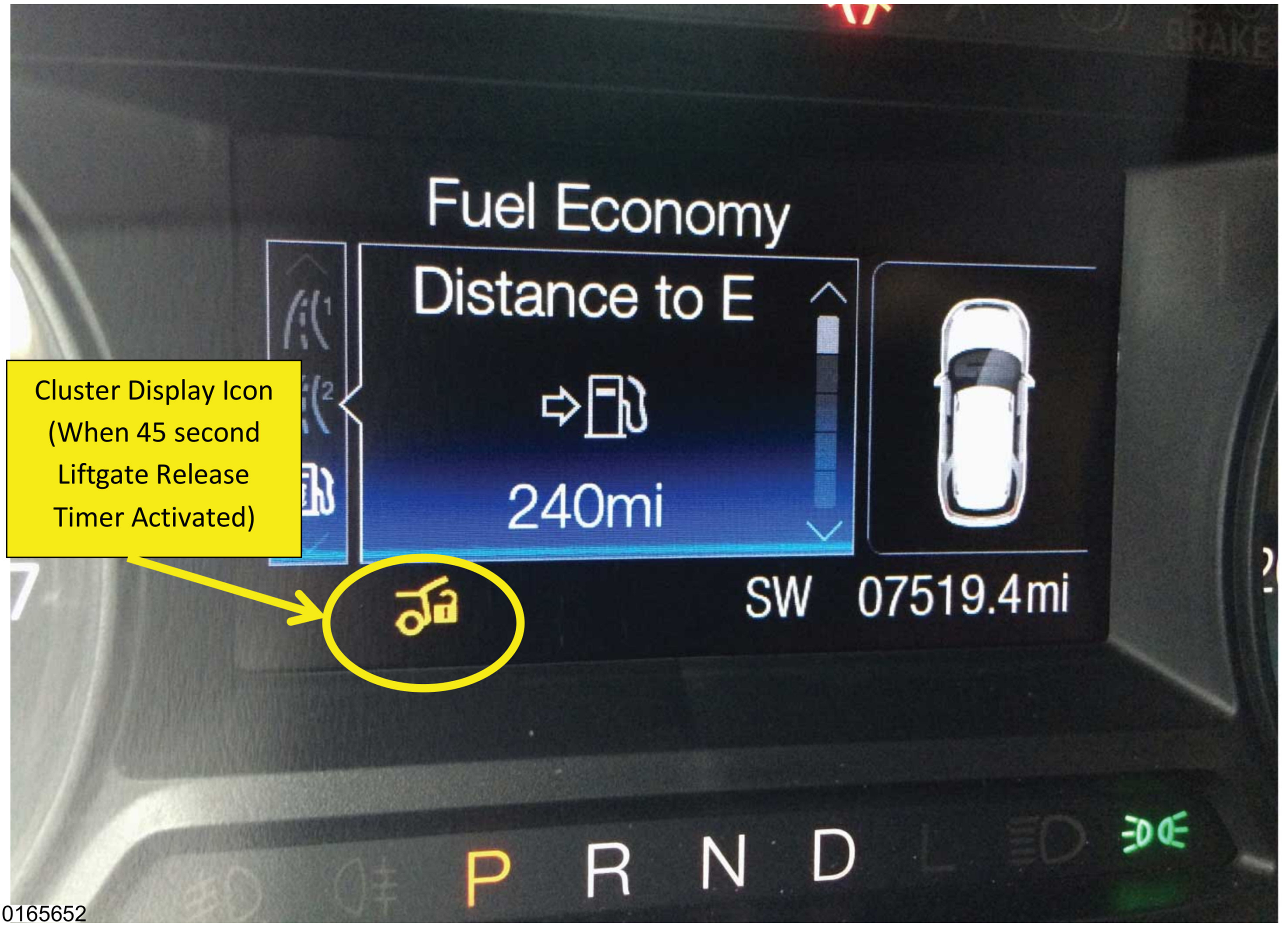
Section 2: Electrical


Cluster Display Icon (When 45 second Liftgate Release Timer Activated)
Fuel Economy
Distance to E
240mi
SW 07519.4mi
P R N D L

N0165652

Sedan - Luggage Compartment Lid Release Switch

The new standard configuration is effective with all job 1 orders

- Sedan Interceptors are shipped from the assembly plant with trunk release activated on Run/Start power.
- Converting to activate trunk release on Battery power, hot all the time, requires Integrated Diagnostic Service (IDS) tool to enable this function.

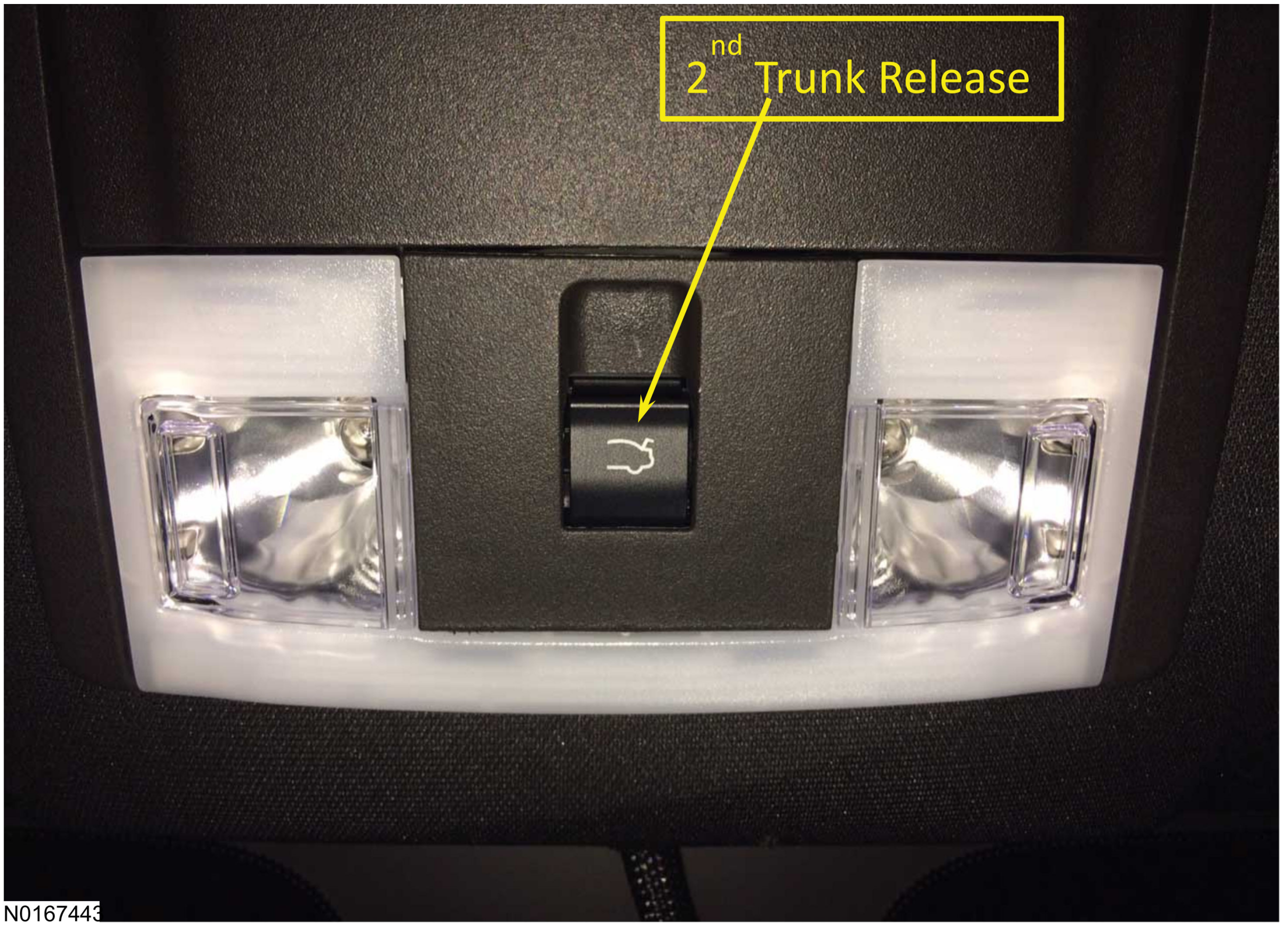
NEW Sedan Second Luggage Compartment Lid Release Switch

New for 2016 Model Year Sedan Police Interceptor

Standard Feature on Sedan Police Interceptor

- The addition of a second trunk release switch that is located in the overhead console between the map lights in the headliner at top of windshield. It activates the trunk release by pulling downward and away from the overhead console.
- This switch provides 2nd method for trunk release if access to the existing trunk release button on the instrument panel is covered by items such as a laptop.
- This 2nd switch function provides the same function as the existing push-button switch on the instrument panel. When activated, it releases the trunk lid.

Section 2: Electrical



N0167443

Sedan Upfitter Wire Bundle Dash Panel Pass-Through

Certain Police Interceptor vehicles come equipped with auxiliary dash panel pass-through wire circuits (upfitter auxiliary) depending on selected option packages.

New for 2015 MY, the **standard** upfitter auxiliary pass-through wire circuits (6 twisted pairs) can be used by the vehicle modifier.

- The vehicle interior end of the auxiliary upfitter circuits is found beneath the instrument panel near the Body Control Module (BCM).
- The underhood end of the auxiliary upfitter circuits is found taped to a harness underhood near the Battery Junction Box (BJB).

1. Twisted Pair A (20AWG)

   White
   White / Blue
2. Twisted Pair B (20AWG)

   Yellow
   Yellow / Black
3. Twisted Pair C (20AWG)

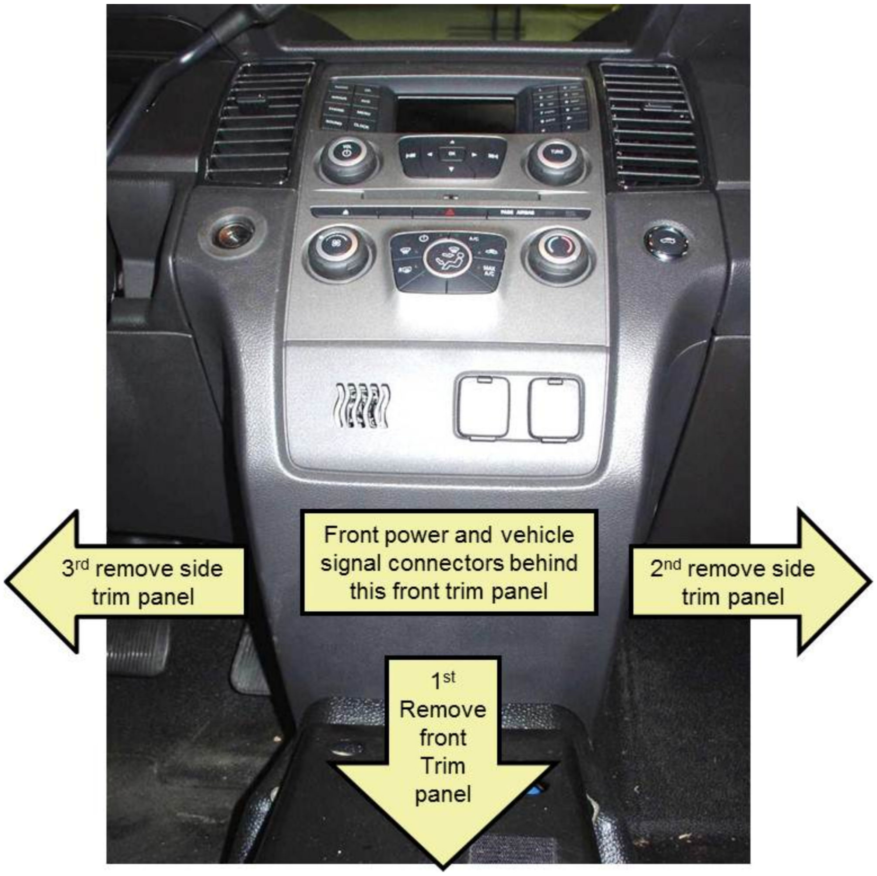
   Green
   Green / White
4. Twisted Pair D (20AWG)

   Blue
   Blue / White

Section 2: Electrical

5. Twisted Pair E (14AWG)
   - Orange
   - Orange / Black
6. Twisted Pair E (14AWG)
   - Black
   - Black / White

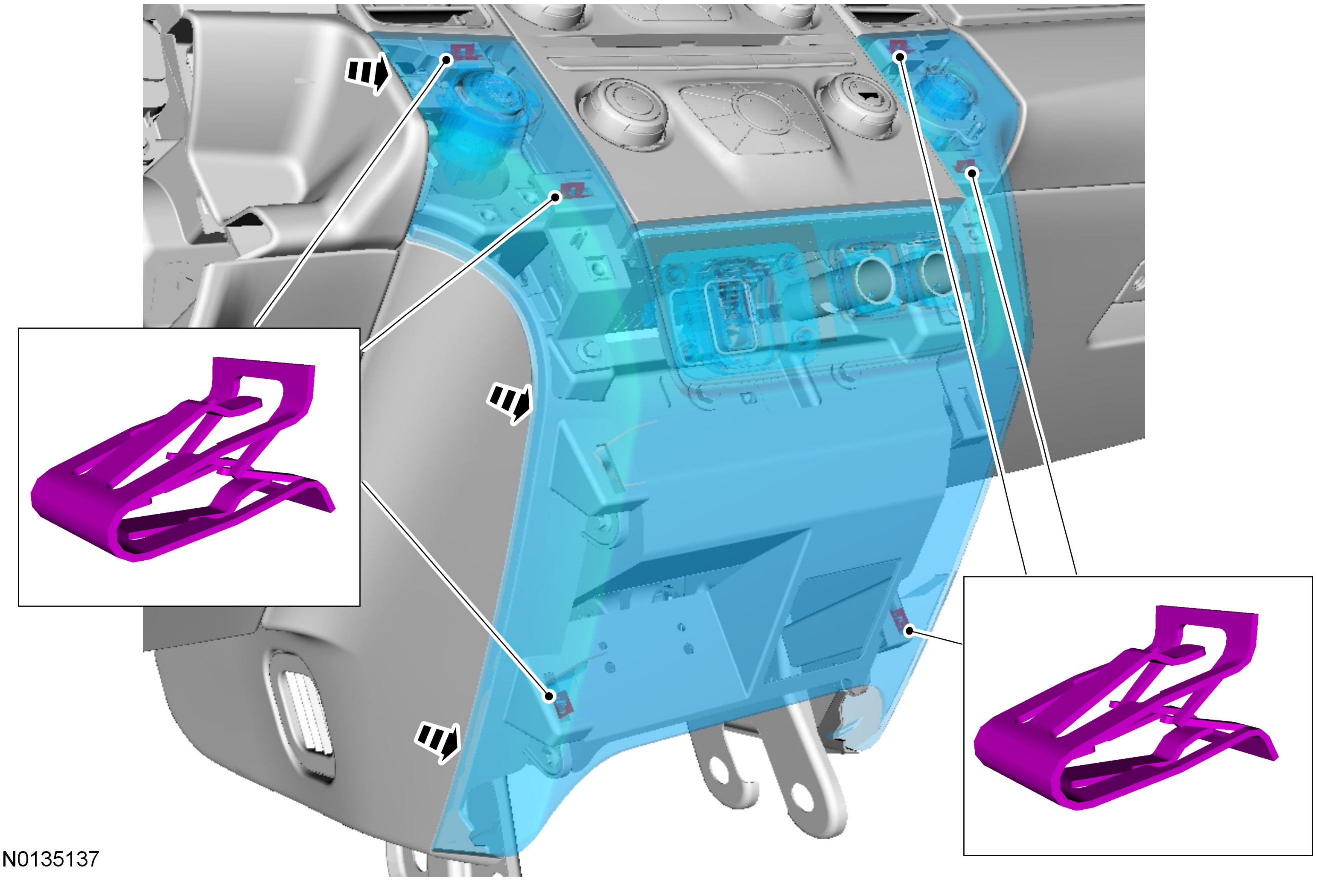
Sedan — Lower Center Instrument Panel Removal and Installation


Front power and vehicle signal connectors behind this front trim panel
3rd remove side trim panel
2nd remove side trim panel
1st Remove front Trim panel

N0151478

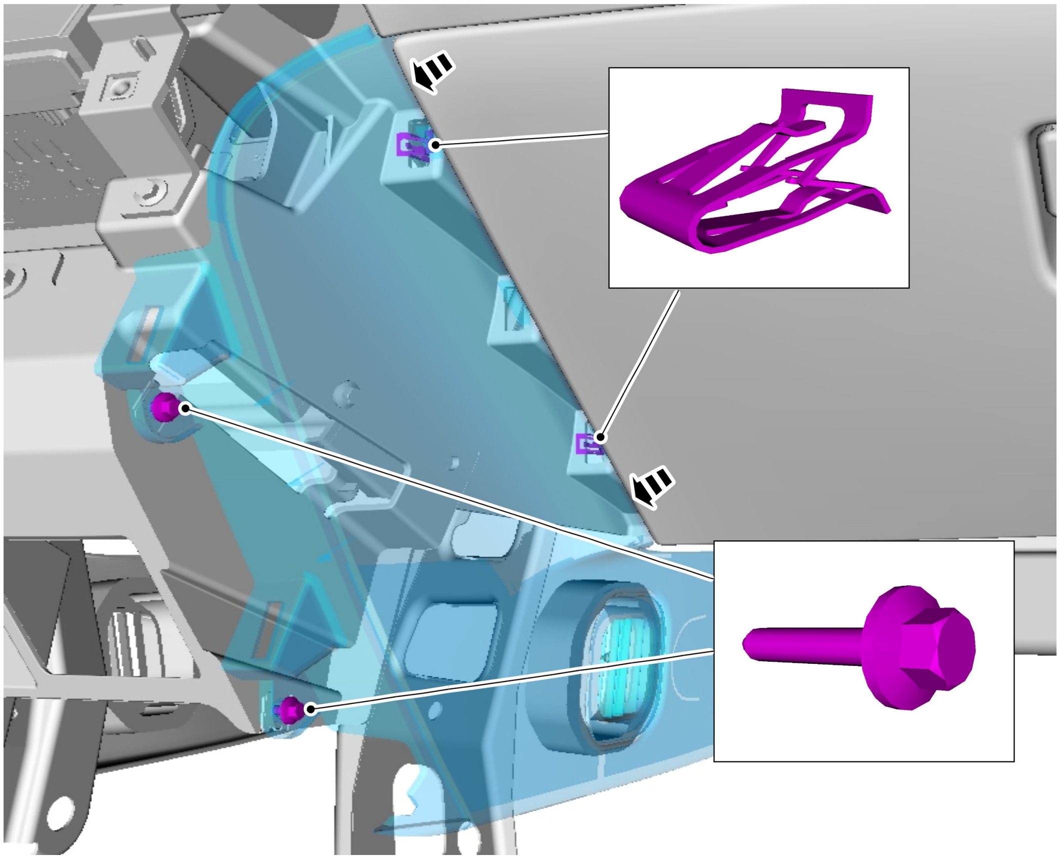
1. Remove the lower center instrument panel finish panel.

Section 2: Electrical



2. Remove the LH and RH lower cowl panel side trim.

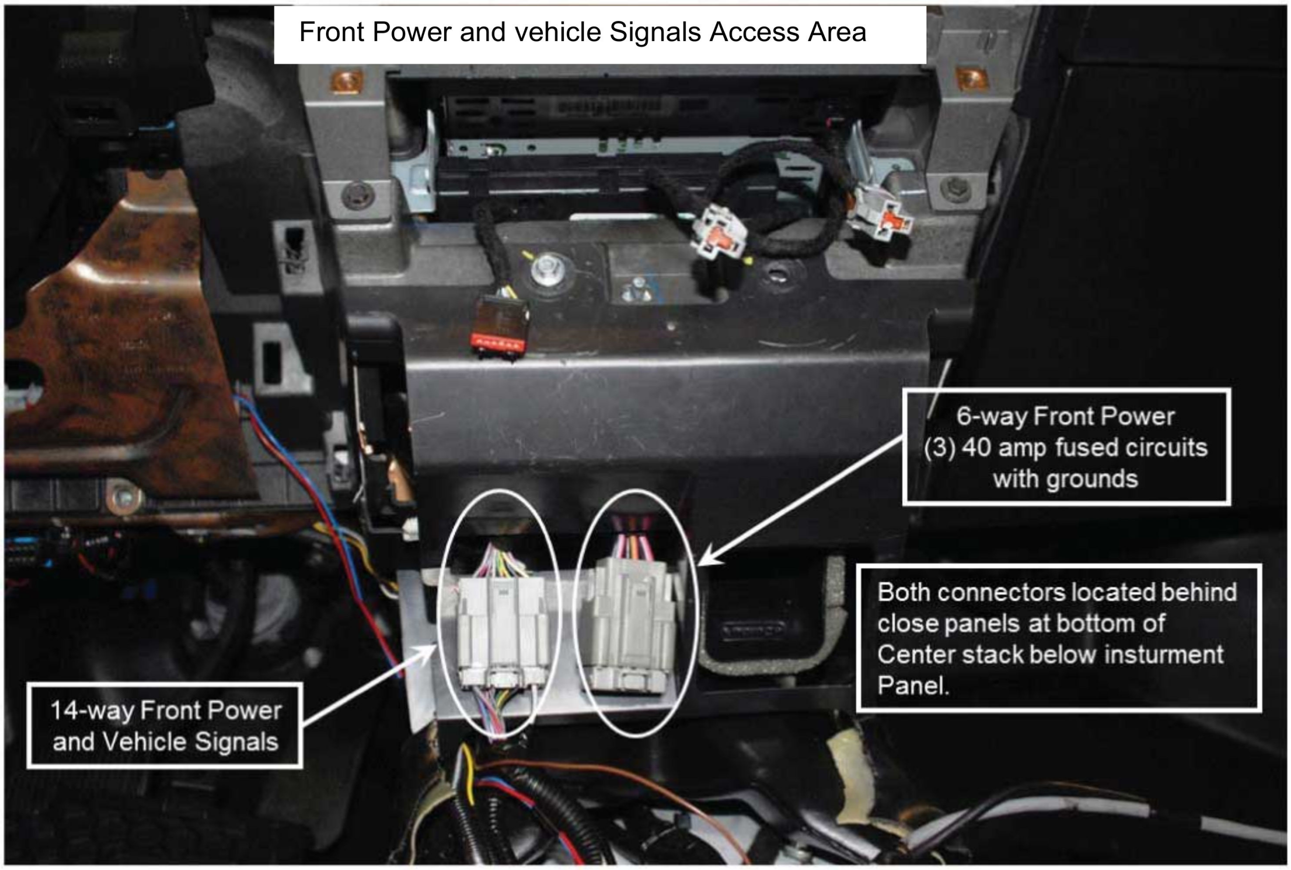
Section 2: Electrical


N0135175

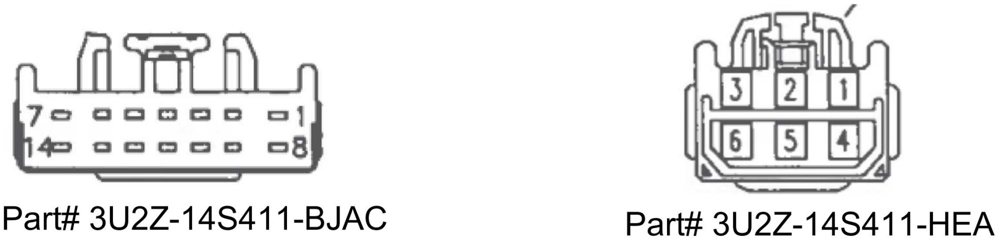
Sedan — Front Power And Vehicle Signals Access Area

- Located behind lower center instrument panel trim panels
- Siren speaker at Instrument panel center stack (4 Pin)
- Power/vehicle signals at instrument panel center stack (14 Pin)
- Police lights at instrument panel center stack (14 Pin)
- Police radio connector at instrument panel/center stack (4 Pin)
- 40A auxiliary power at instrument panel/center stack (6 Pin)

Section 2: Electrical


Front Power and vehicle Signals Access Area
6-way Front Power (3) 40 amp fused circuits with grounds
Both connectors located behind close panels at bottom of Center stack below insturment Panel.
14-way Front Power and Vehicle Signals

N0151471


7
1
14
8
3
2
1
6
5
4
Part# 3U2Z-14S411-BJAC
Part# 3U2Z-14S411-HEA

N0151470

Connector View For Connector 3U2Z-14S411–HEA (continued on the next page).

Pin Number	Description	Fuse	Wire Color
1	B+ (40A)	BJB #40	VT-RD
2	B+ (40A)	BJB #6	BN-RD
3	B+ (40A)	BJB #16	VT-RD
4	Ground	IP Tunnel	BK-BJ

Section 2: Electrical

(Continued)

5	Ground	IP Tunnel	BK-BJ
6	Ground	IP Tunnel	BK-BJ

Connector View For Connector 3U2Z-14S411–BJAC.

Pin Number	Description	Fuse	Wire Color
1	B+ Feed #1 (20A)	IP #2	GY-RD
2	Steering Wheel Switch #1 Output (1A) Grnd	GNRL Function Module	GY-BN
3	Steering Wheel Switch #2 Output (1A) Grnd	GNRL Function Module	WH-VT
4	Steering Wheel Switch #3 Output (1A) Grnd	GNRL Function Module	GN-BN
5	Steering Wheel Switch #4 Output (1A) Grnd	GNRL Function Module	YE-GY
6	Start (2A)	BJB #95	BN-BU
7	Run/Start #1 (20A)	BJB #73	WH-BN
8	B+ Feed #2 (20A)	IP #32	BU-RD
9	Vehicle Speed Output (VSS)	PCM	VT-OG
10	Delay Accessory (15A)	IP #17	GN-VT
11	B+ Feed #2 (15A)	IP #5	YE-RD
12	Park Detect Signal (Transmission)	Sifter GRND	GN
13	Driver Door Ajar Signal	IP #9 GRND	GN-VT
14	Run/Start #2 (20A)	IP #74	VT-BN

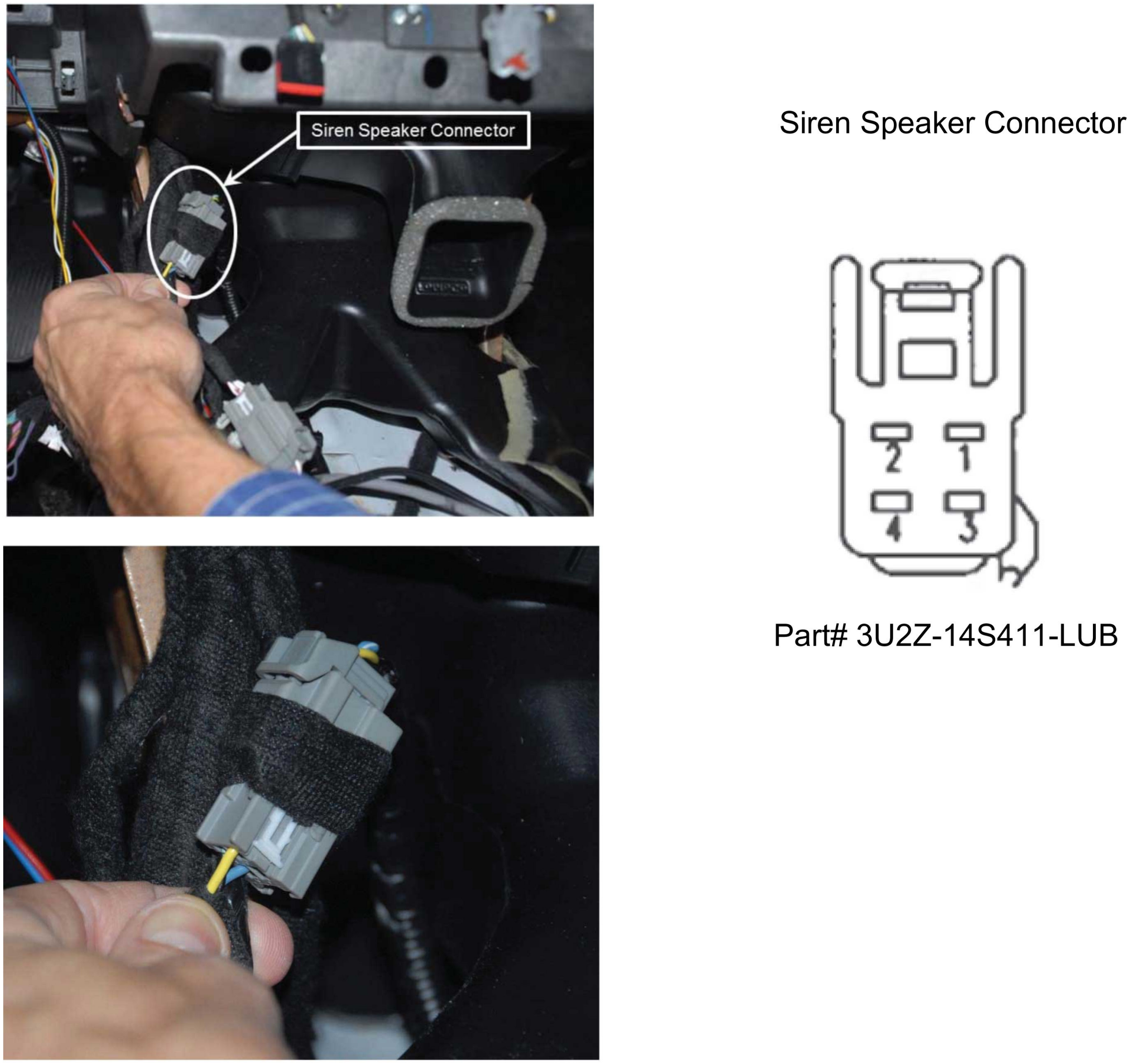
NOTE:
Fuse sizes are given to help locate the fuse in the Power Distribution Box (PDB). Ford recommends that current be limited to 85% of the value: 20 Amp should be limited to 17 Amp 15 Amp should be limited to 12 Amp.

Park Detect: Sources a ground when the vehicle is in park. This circuit is capable of grounding 1 Amp.

Driver Door Ajar: This circuit is a sense only grounded circuit when the door is closed. It is used to supply a module that has pull up resistors in its input.

Section 2: Electrical

Sedan — Siren Speaker Connector


Siren Speaker Connector
Siren Speaker Connector
2
1
4
3
Part# 3U2Z-14S411-LUB

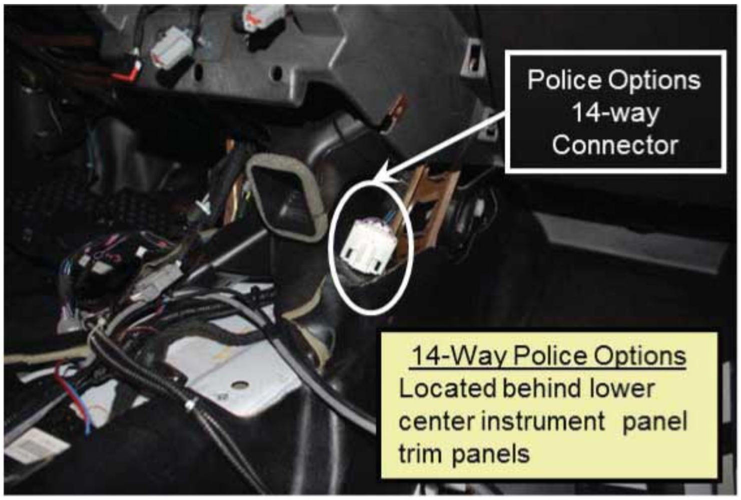
N0N0151473

Connector View For Connector 3U2Z-14S411–LUB.

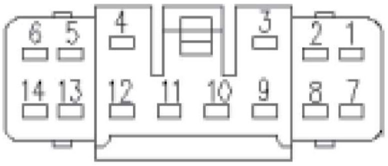
Pin Number	Description	Wire Color
1	Siren Driver Side Feed (+)	YE
2	Siren Shield Driver Side (-)	
3	Open Passenger Side Front (+)	
4	Siren Return Passenger Side Front (-)	BU-WH

Section 2: Electrical

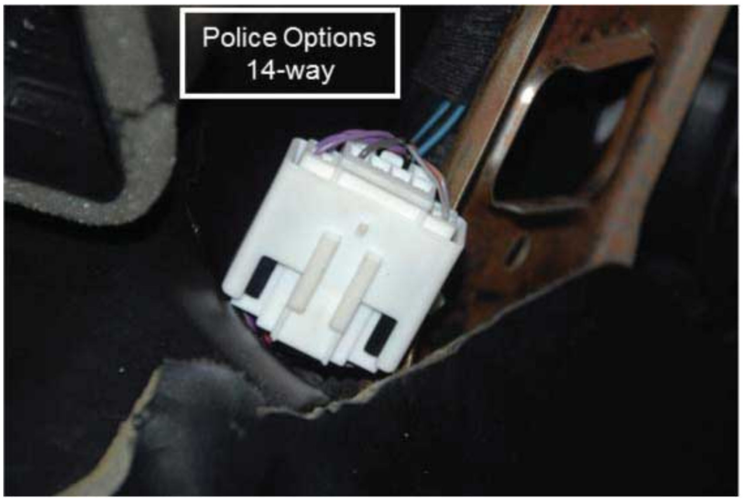
Sedan — Police Options 14–Way Connector


Police Options
14-way
Connector
14-Way Police Options
Located behind lower
center instrument panel
trim panels

Police Options 14-Way Connector


6
5
4
3
2
1
14
13
12
11
10
9
8
7

Part# CU2Z-14S411-APA


Police Options
14-way

N0N015474

Connector View For Connector 3U2Z- 14S411–APA (continues on the next page).

Pin Number	Description	Wire Color
1	Wig Wag Control	VT
2	Front Corner LED Power Control	VT-OG
3	Front Flasher Power Control	BN-YE
4	Speaker (-) at Grille (Option)	GN-BU
5	Front Visor Lightbar Data	GY-BU

(Continued)

6	Front Corner LED Light Sync	GY-OG
7	Dimmer	VT-GY
8	Brake Output Signal Ground	VT
9	Speaker (+) at Grille (Option)	BN
10	Front Visor Light Bar Ground	BK-VT
11	Battery Saver	YE-GN
12	Open	
13	Open	
14	LED Flash Pattern	GY-BN

Front WIGWAG Power: Supplies power to the wigwag connectors at the headlamps.

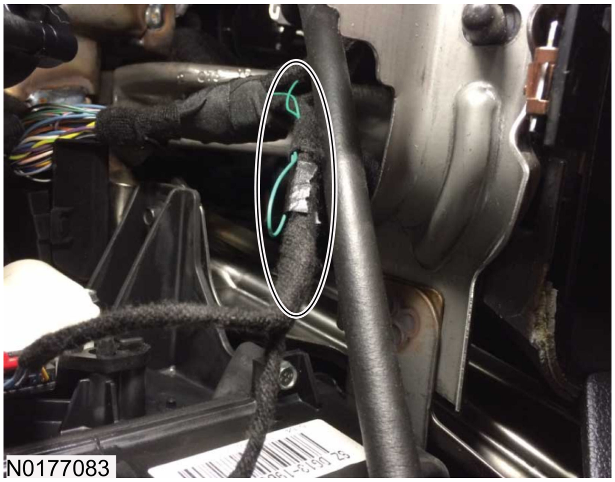
Front Flasher Power: Supplies power to the flasher relay.

Dimmer: Circuit supplied to allow backlight dimming of aftermarket equipment.

Brake Output: Fused Brake output.

New 2017 Utility Police Interceptor Horn Ring Circuit

Ground side loop of horn ring circuit from the Body Control Module (BCM) (Utility Green) wire loop taped to harness from above the opening in the lower center instrument panel above the accelerator pedal. Ground side loop taped to harness.

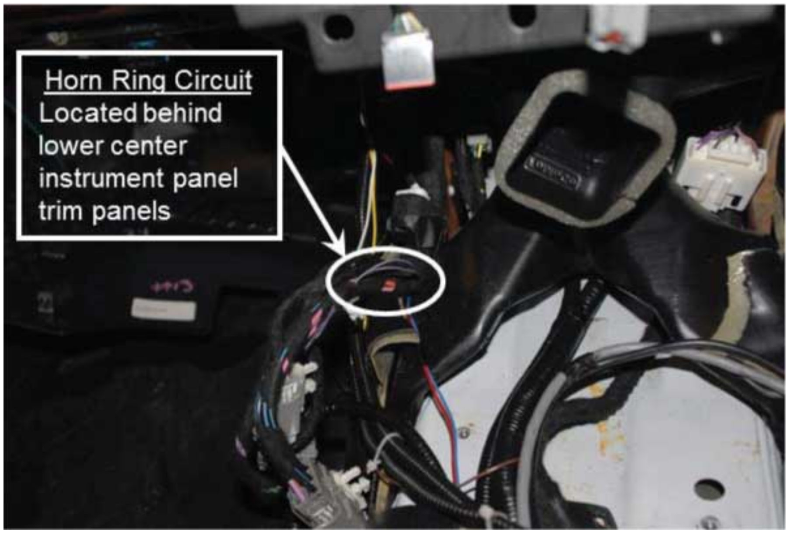


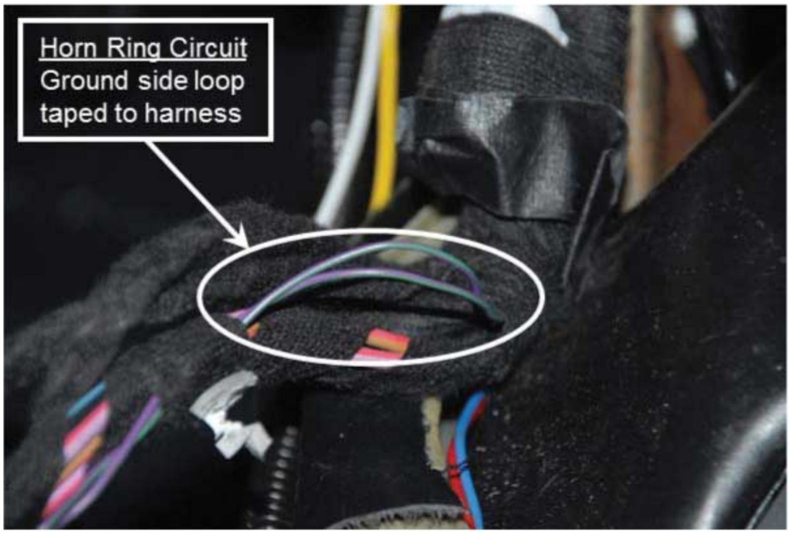
N0177083

Sedan — Horn Ring Circuit

Ground side loop of horn ring circuit from Body Control Module (BCM) (sedan violet/Green) (utility green) wire loop taped to harness from above the opening in lower center instrument panel trim panels.

Section 2: Electrical

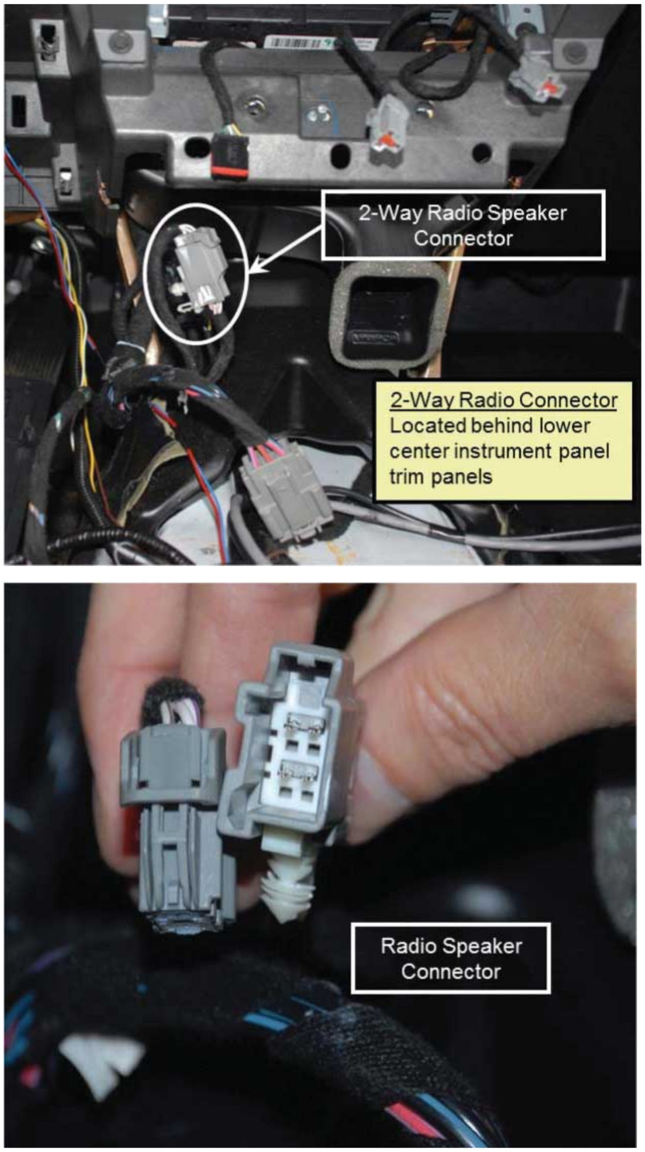

Horn Ring Circuit
Located behind lower center instrument panel trim panels


Horn Ring Circuit
Ground side loop taped to harness

N0151475

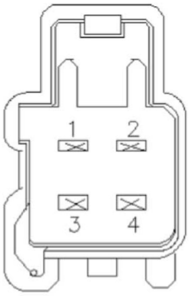
Section 2: Electrical

Sedan — Radio and Speaker Connector

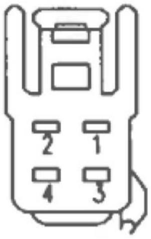

2-Way Radio Speaker Connector
Radio Speaker Connector

2-Way Radio Connector
Located behind lower center instrument panel trim panels

Radio and Speaker Connector



Part# 3U2Z-14S411-BUB



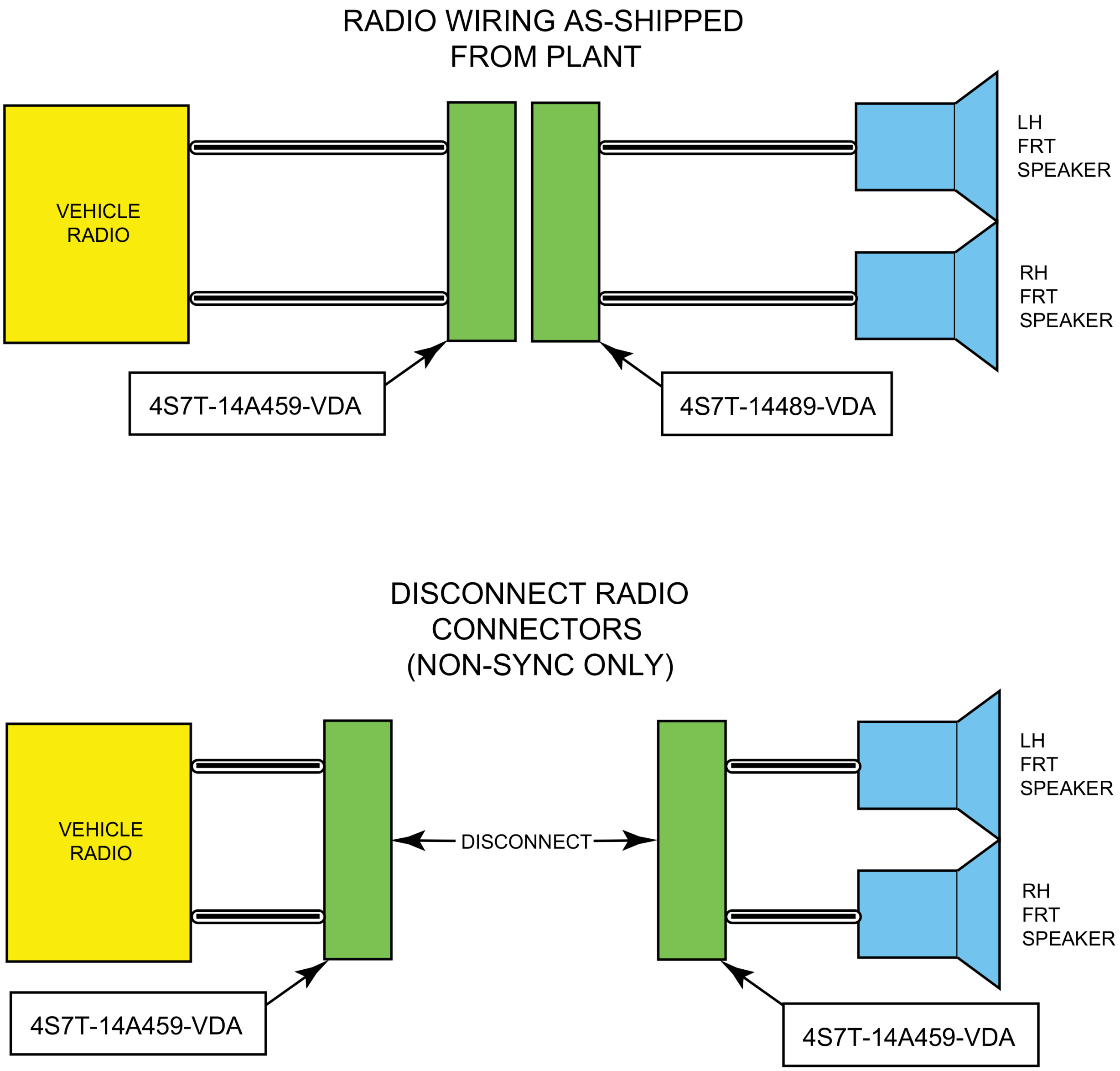
Part# 3U2Z-14S411-LUB

N0151472

Connector View For Connector 3U2Z- 14S411–BUB.

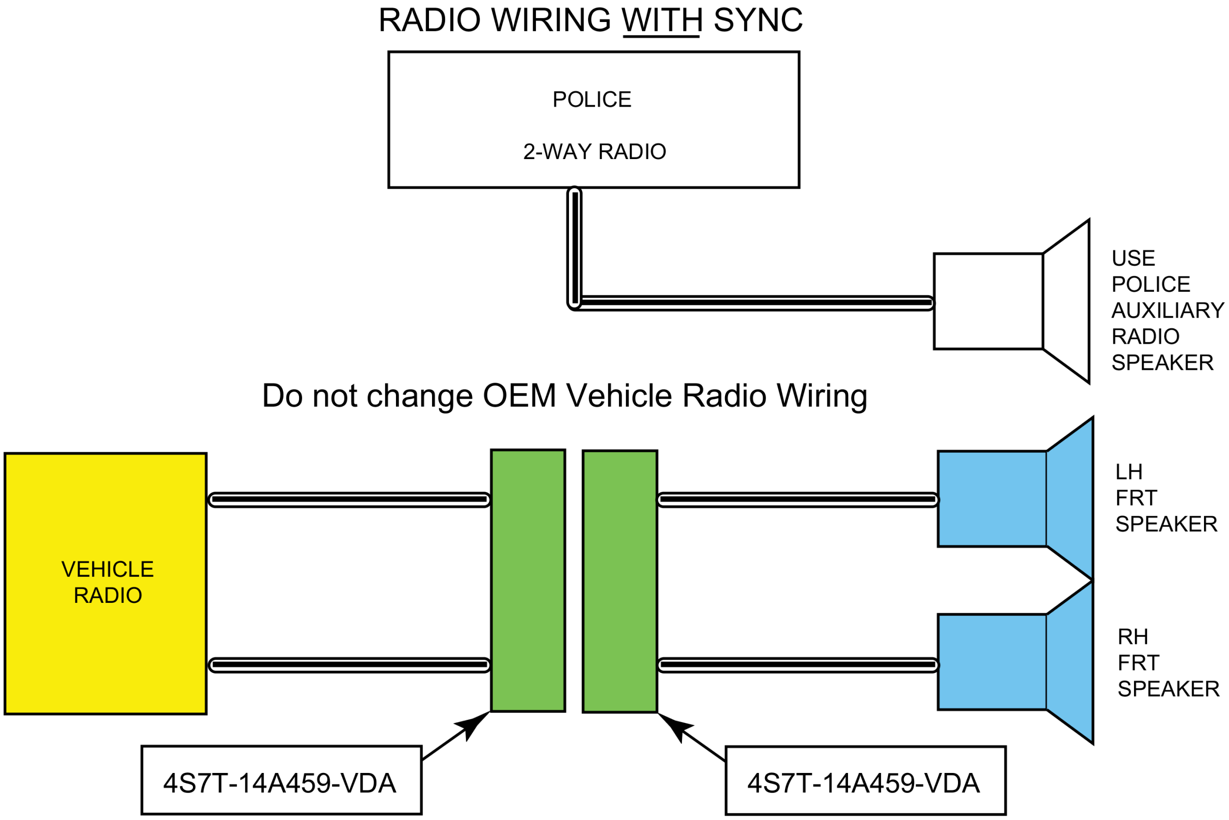
Pin Number	Description
1	Driver Side Front Speaker (+)
2	Driver Side Front Speaker (-)
3	Passenger Side Front Speaker (+)
4	Passenger Side Front Speaker (-)

Section 2: Electrical


RADIO WIRING AS-SHIPPED FROM PLANT
VEHICLE RADIO
LH FRT SPEAKER
RH FRT SPEAKER
4S7T-14A459-VDA
4S7T-14489-VDA
DISCONNECT RADIO CONNECTORS (NON-SYNC ONLY)
VEHICLE RADIO
DISCONNECT
LH FRT SPEAKER
RH FRT SPEAKER
4S7T-14A459-VDA
4S7T-14A459-VDA

N0150582

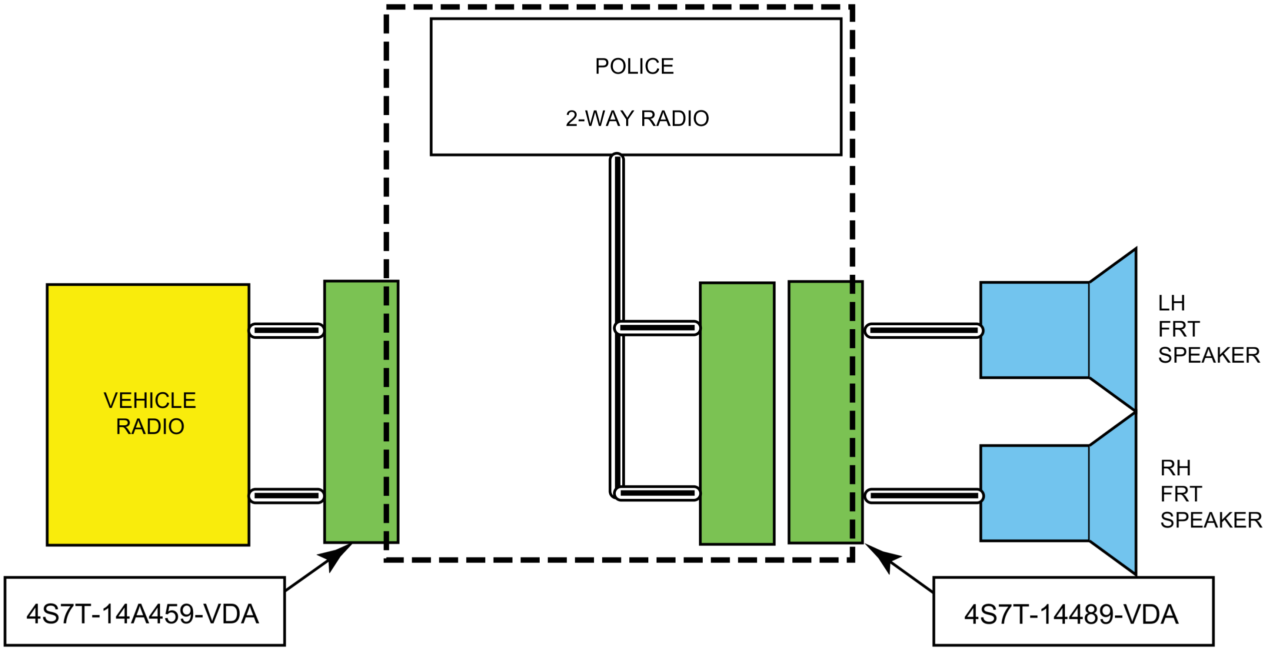
Section 2: Electrical


RADIO WIRING WITH SYNC
POLICE
2-WAY RADIO
USE
POLICE
AUXILIARY
RADIO
SPEAKER
Do not change OEM Vehicle Radio Wiring
VEHICLE
RADIO
LH
FRT
SPEAKER
RH
FRT
SPEAKER
4S7T-14A459-VDA
4S7T-14A459-VDA

N0150583

Section 2: Electrical

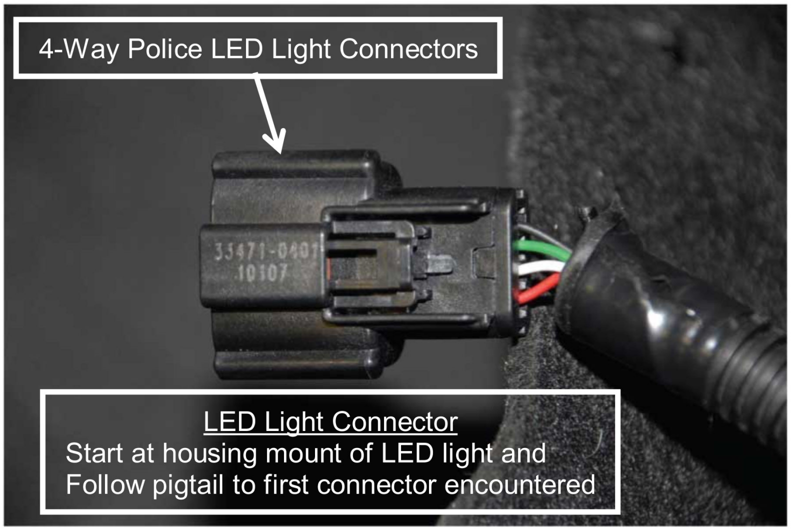
INSTALL POLICE 2-WAY RADIO AND MAKE CONNECTIONS TO OEM CONNECTORS (NON-SYNC ONLY)


POLICE
2-WAY RADIO
VEHICLE RADIO
LH FRT SPEAKER
RH FRT SPEAKER
4S7T-14A459-VDA
4S7T-14489-VDA

N0150581

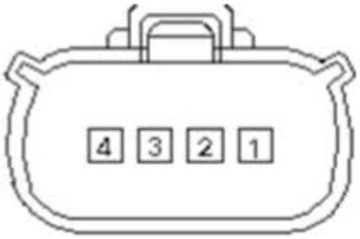
Section 2: Electrical

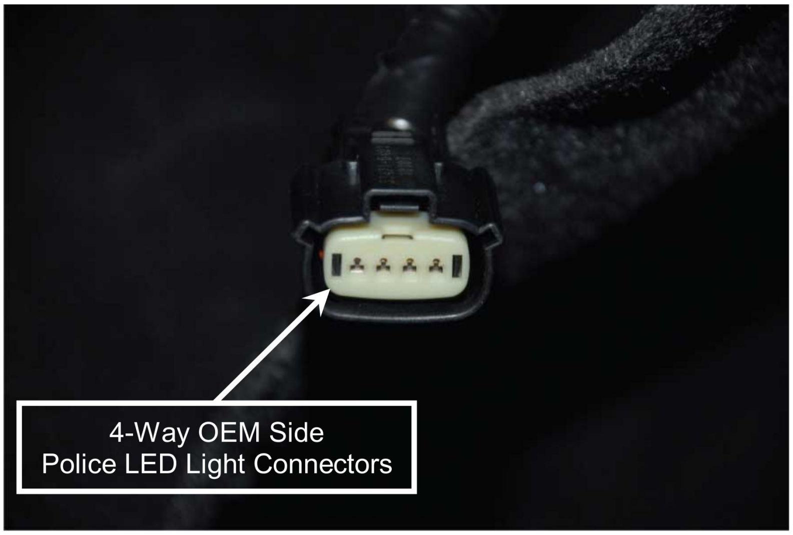
Sedan – 4–Way Connector For All Police LED Light Heads


4-Way Police LED Light Connectors

LED Light Connector
Start at housing mount of LED light and
Follow pigtail to first connector encountered

4-Way Connector For All Police LED Light Heads




4-Way OEM Side
Police LED Light Connectors

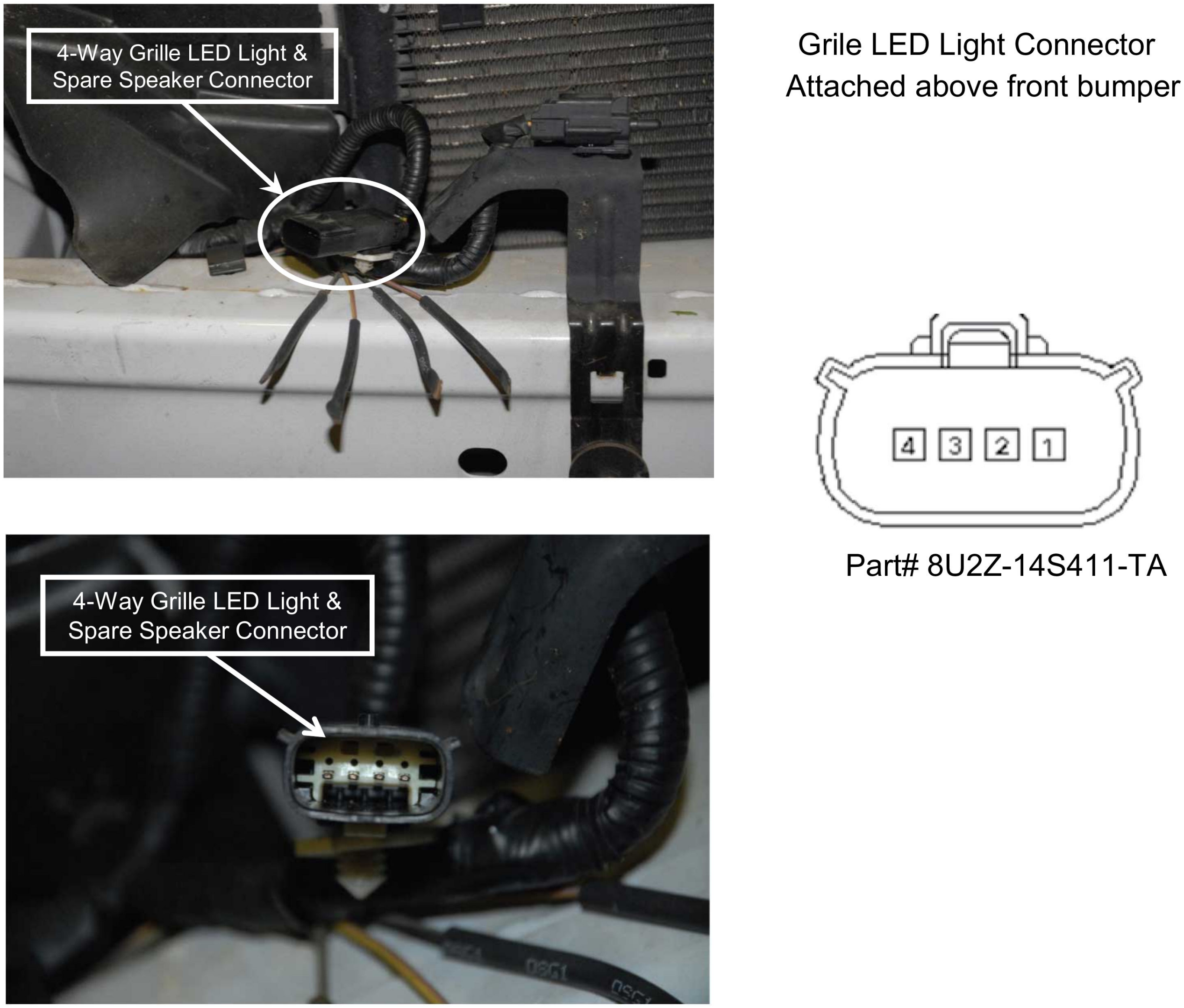
N0151525

Connector View For Connector 8U2Z-14S411–TA

Pin Number	Description
1	Control Power
2	LED Light Pattern
3	LED Light Synch
4	Ground

Section 2: Electrical

Sedan — Grille LED Light Connector


4-Way Grille LED Light & Spare Speaker Connector
Grile LED Light Connector Attached above front bumper
4
3
2
1
Part# 8U2Z-14S411-TA
4-Way Grille LED Light & Spare Speaker Connector

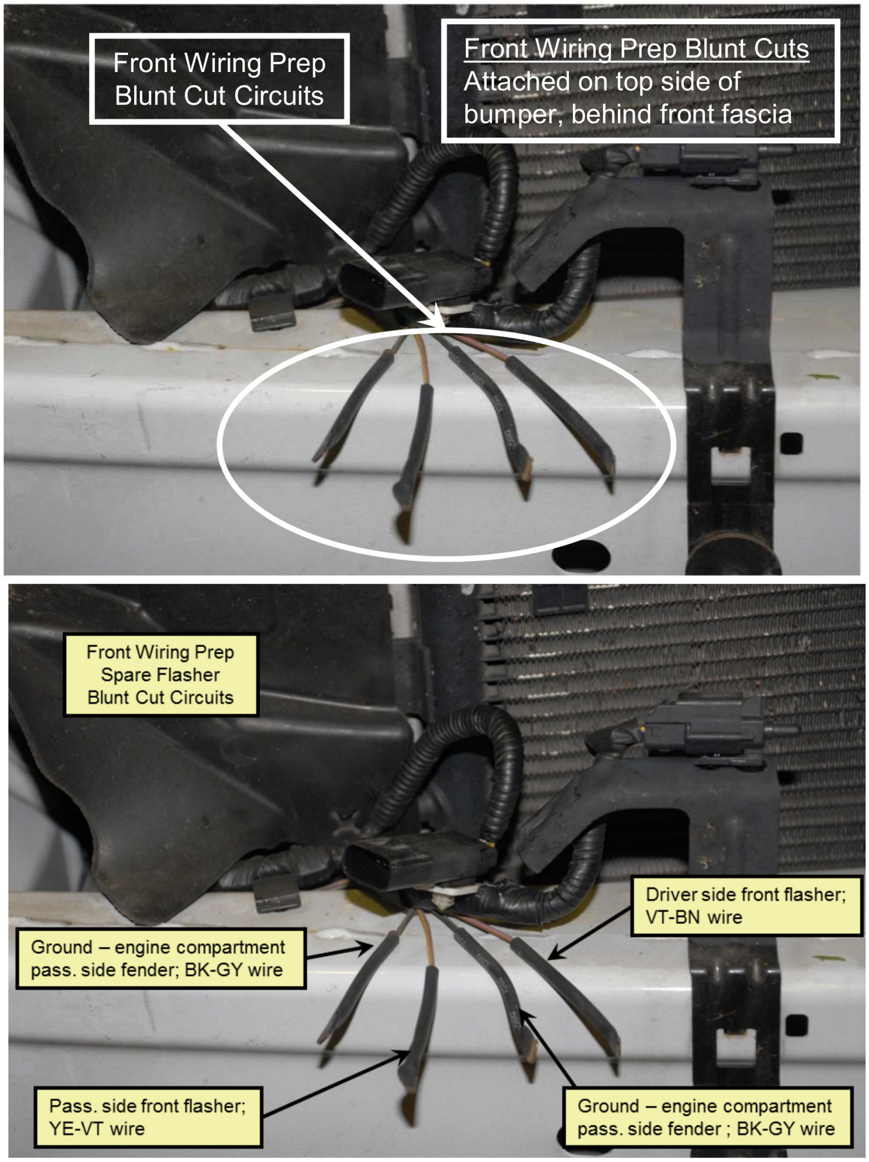
N0151479

Connector View For Connector 8U2Z-14S411–TA.

Pin Number	Description	Wire Color
1	Grille LED Light Ground	BN
2	Grille LED Light Pattern	GY-BN
3	Speaker (-)	GY-OG
4	Speaker (+) Spare	BK-GY

Section 2: Electrical

Sedan — Front Wiring Prep Blunt Cut Circuits

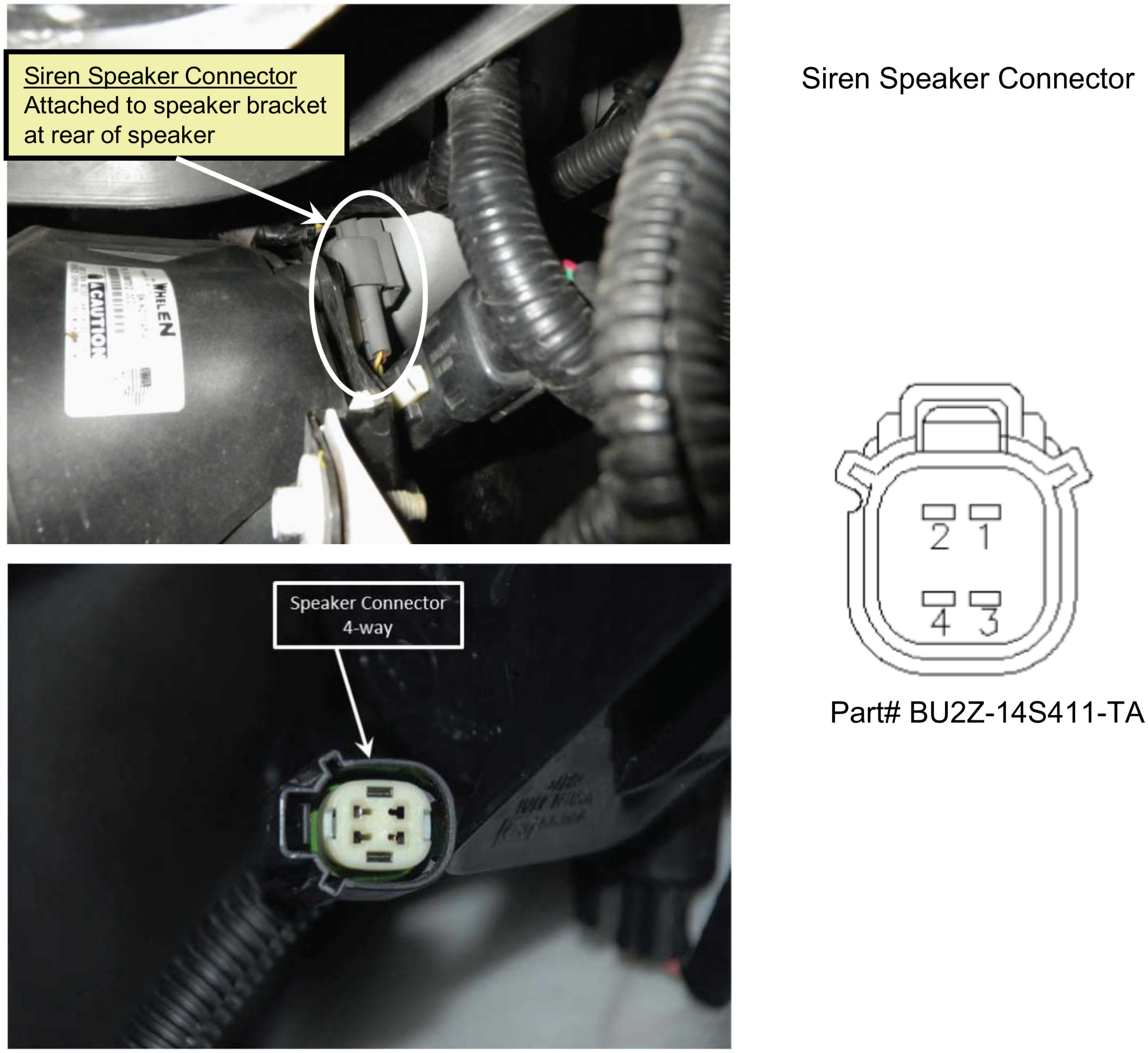

Front Wiring Prep
Blunt Cut Circuits
Front Wiring Prep Blunt Cuts
Attached on top side of bumper, behind front fascia
Front Wiring Prep
Spare Flasher
Blunt Cut Circuits
Driver side front flasher; VT-BN wire
Ground – engine compartment pass. side fender; BK-GY wire
Pass. side front flasher; YE-VT wire
Ground – engine compartment pass. side fender ; BK-GY wire

N0151480

Front Wiring Prep Blunt Cut Circuits Attached to Front Bumper

Section 2: Electrical

Sedan — Siren Speaker Connector


Siren Speaker Connector
Attached to speaker bracket at rear of speaker
Speaker Connector 4-way
Siren Speaker Connector
2 1
4 3
Part# BU2Z-14S411-TA

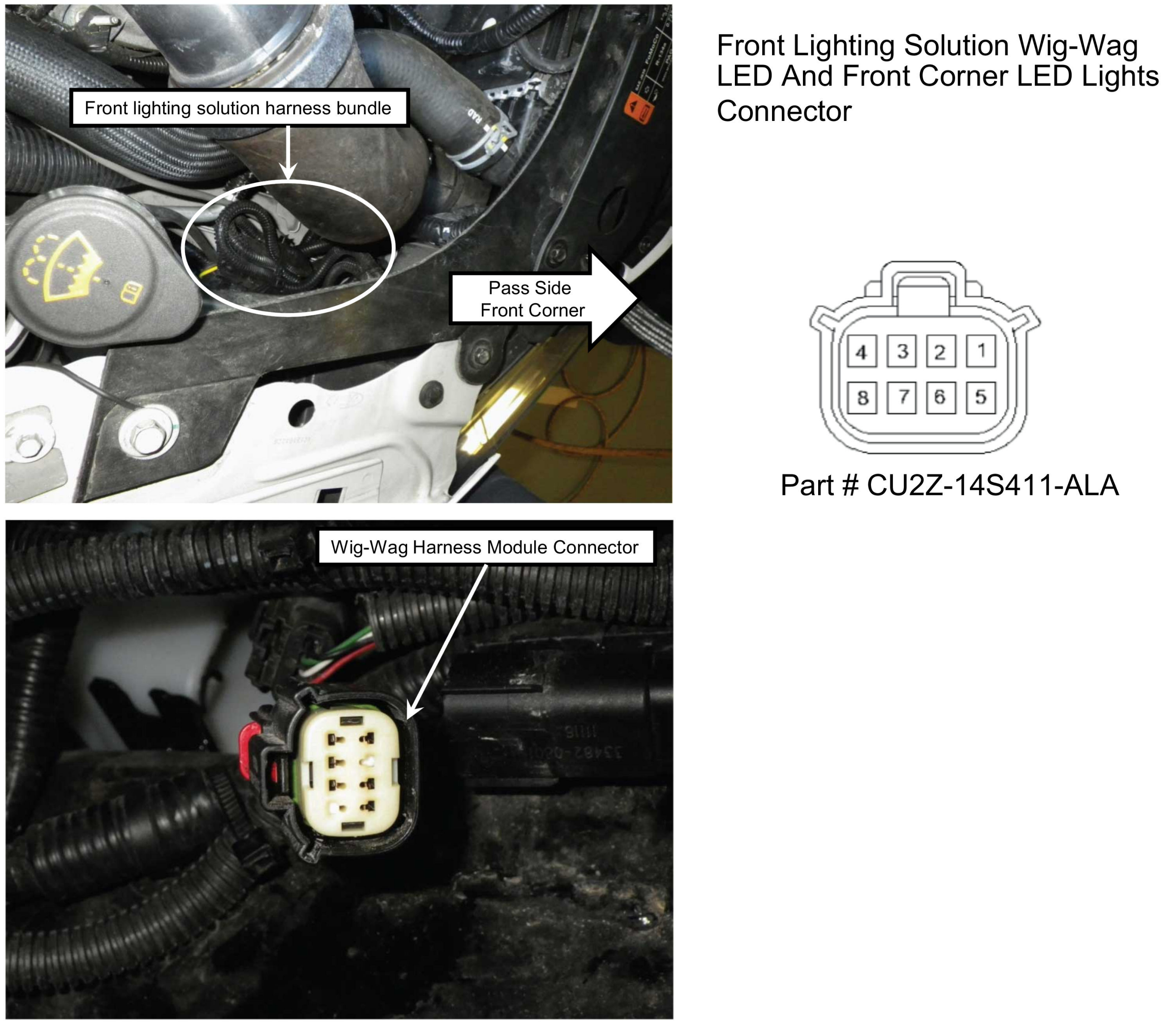
N0151481

Connector View For Connector BU2Z-14S411–TA.

Pin Number	Description	Wire Color
1	Siren (+)	YE
2	Open	
3	Open	
4	Siren (-)	BU-WH

Section 2: Electrical

Sedan — Front Lighting Solution Wig-Wag LED And Front Corner LED Lights Connector.


Front lighting solution harness bundle
Pass Side Front Corner
Wig-Wag Harness Module Connector
Front Lighting Solution Wig-Wag LED And Front Corner LED Lights Connector
4
3
2
1
8
7
6
5
Part # CU2Z-14S411-ALA

N0151482

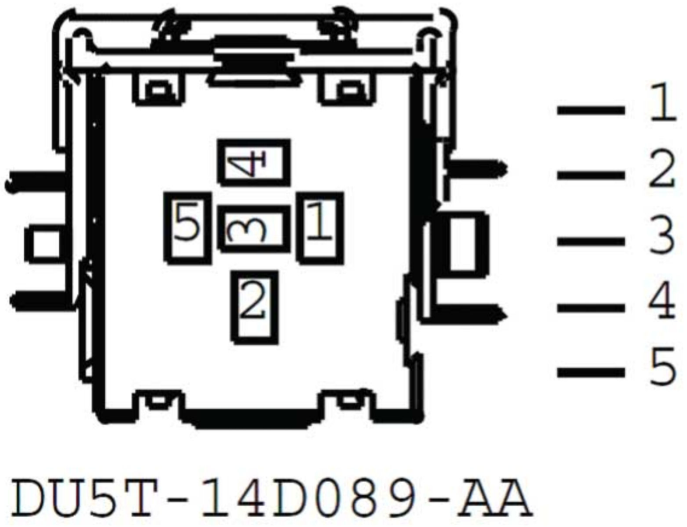
Connector View For Connector CU2Z-14S411–ALA (continued on the next page).

Pin Number	Description	Fuse	Wire Color
1	Wig-Wag Control		VT
2	Wig-Wag Passenger Side Pattern		GN-WH
3	Wig-Wag Driver Side Pattern		GY
4	Open		
5	Wig-Wag Run/Start (20A)	BJB #74	VT-BN

(Continued)

6	Front Corner LED Lights Control/ Power		
7	Front Corner LED Lights Pattern		GY-BN
8	Wig-Wag Ground		BK-GY

Sedan — Flasher Relay



N0141078

Connector View For Connector DU5T-14D089–AA.

Pin Number	Circuit Number	Signal Name/Function
1		Flasher Power
2		
3		
4		Right Side Flasher Blunt Cut
5		Left Side Flasher Blunt Cut

N0141079

Front flasher power is supplied through the second 14 way power connector and is available on the sedan and utility. The right and left blunt cuts are located in the front grille area.

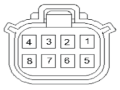
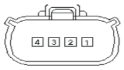
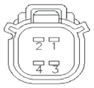
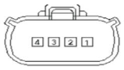
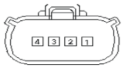
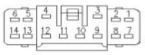
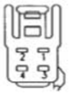
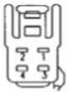
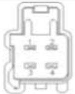
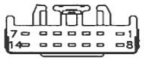
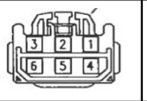
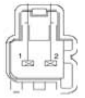
The rear flasher relay is used to turn modifier supplied decklid flashers on in the Sedan when the trunk is open.

NOTE:
Fuse sizes are given to help locate the fuse in the PDB. Ford recommends that current be limited to 85% of the value (40 Amp should be limited to 34 Amp).

Section 2: Electrical

Sedan — Pigtail Information

2013MY SEDAN/UTILITY POLICE INTERCEPTOR PIGTAIL INFORMATION

CONNECTOR PICTURE	HARNESS	DEVICE	CONN. TYPE	PIN	FUNCTION	Service Pigtail #	INFO
	14290	POL FLASH	8-WAY	1 2 3 4 5 6 7 8	WW INPUT WW RH PTRN/PWR WW LH PTRN/PWR WW R/S STROBES PWR PATTERN WW GND	CU2Z-14S411-ALA	Must splice cavities 1 and 6 together if function is not being used. Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	LH WIG WAG RH WIG WAG	4-WAY	1 2 3 4	WW INPUT WW SCN LOCK WW SYNC WW GND	8U2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	SIREN SPEAKER	4-WAY	1 2 3 4	SIREN + (UNUSED) (UNUSED) SIREN -	BU2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	LH SIDE CORNER MARKER RH SIDE MARKER	4-WAY	1 2 3 4	Power Pattern Sync GND	8U2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	GRILLE & LOUD SPEAKER	4-WAY	1 2 3 4	TDM GRL GND TDM PATTERN LD SPKR - LD SPKR +	8U2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14401	POLICE POWER & VEHICLE SIGNALS	14-WAY	1 2 3 4 5 6 7 8 9 10 11 12 13 14	WIGWAG LAMP CONTROL SIDE LAMP PWR CONTROL FRONT FLASHER PWR CONTROL LOUDSPEAKER NEG OPEN SIDE LAMP SYNC CONTROL DIMMER BRAKE OUTPUT LOUDSPEAKER PWR/TDM GRILL OPEN OPEN OPEN OPEN SIDE STROBE PATTERN	CU2Z-14S411-APA	0.64 CAVITIES- 2TAD-0.75mm 2.8 CAVITIES- 2TAD-1.0mm 0.64 CAVITIES- 1/2/5/6/7/8/13/14 TERMINAL 3F2T-14474-RA 2.8 CAVITIES- 3/4/9/10/11/12 TERMINAL 97BG-14474-BBA
	14401	SIREN	4-WAY	1 2 3 4	SIREN FEED/LEFT FRONT SPK + SIREN SHIELD/LEFT FRONT SPK - OPEN/RIGHT FRONT SPK + SIREN RETURN/RIGHT FRONT SPK -	3U2Z-14S411-LUB	WIRE TYPE- 2TAD-1.0mm TERMINAL 97BG-14474-ABB
	14401	2-WAY RADIO	4-WAY	1 2 3 4	LEFT FRONT SPK + LEFT FRONT SPK - RIGHT FRONT SPK + RIGHT FRONT SPK -	3U2Z-14S411-LUB	WIRE TYPE- 2TAD-1.0mm TERMINAL 97BG-14474-ABB
	14401	2-WAY RADIO	4-WAY	1 2 3 4	LEFT FRONT SPK + LEFT FRONT SPK - RIGHT FRONT SPK + RIGHT FRONT SPK -	3U2Z- 14S411-BUB	WIRE TYPE- 2TAD-1.0mm TERMINAL 97BG-14421-ABB
	14401	POLICE FEATURES & BRAKE OUTPUT	14-WAY	1 2 3 4 5 6 7 8 9 10 11 12 13 14	B+ FEED 17AMP CNTRL BUTTON 1 CNTRL BUTTON 2 CNTRL BUTTON 3 CNTRL BUTTON 4 POL_START POL_R/S #1 B+ FEED #2 17AMP VSS DEL ASSY B+ FEED #3 12AMP PARK DETECT DRV DOOR AJAR POL_R/S #2	3U2Z-14S411-BJAC	1.5 CAVITIES- 0.75mm 2.8 CAVITIES- 1.5mm 0.64 CAVITIES- 2/3/4/5/6/9/10/11/12/13 TERMINAL 97BG-14474-ABB 2.8 CAVITIES- 1/7/8/14 TERMINAL 97BG-14474-BCA WIRE TYPE- 2TAD
	14401	POLICE POWER	6-WAY	1 2 3 4 5 6	POLICE B+ 34AMP POLICE B+ 34AMP POLICE B+ 34AMP GROUND GROUND GROUND	3U2Z- 14S411-HEA	WIRE TYPE- 2TAD-4.0mm TERMINAL 97BG-14474-CCA
	14A227 (D258 ONLY)	POLICE INLINE	2-WAY	1 2	CHMSL LAMP DECKLID	3U2Z- 14S411-LAB	WIRE TYPE- 2TAD-0.50mm TERMINAL 97BG-14421-AAB

N0150616

Sedan — Rear Power Access

The rear power access point is a battery access port for police auxiliary equipment mounted in the trunk. It is capable of supplying 80 amps of battery voltage. Voltage to the positive terminal of the rear power access point is supplied through two 50A fused circuits crimped together,

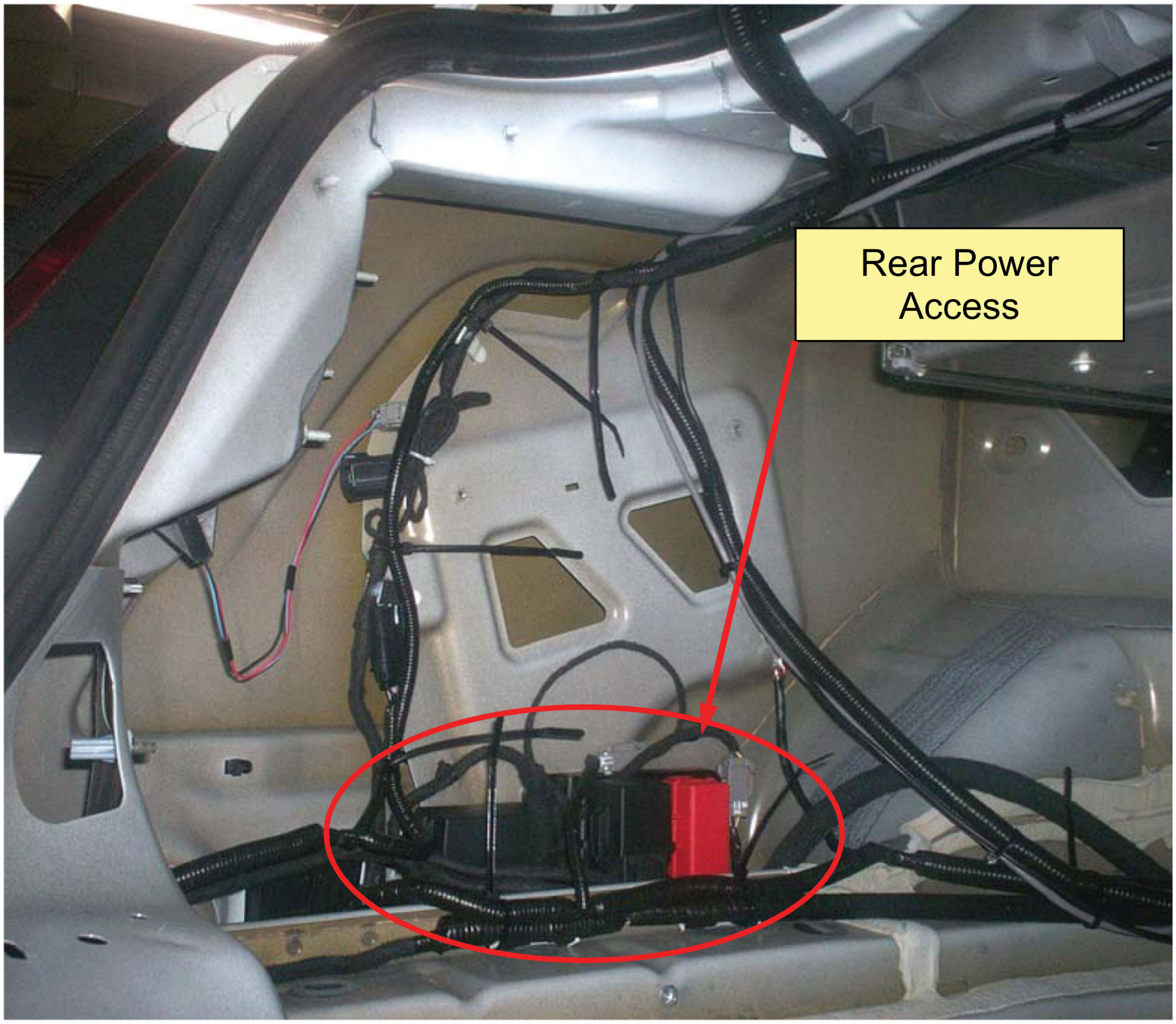
Section 2: Electrical

connected to the battery through under hood battery junction box (BJB) fuses #1 and #2. Battery access is provided by 2 studs contained in an enclosure, mounted in the trunk behind the carpet, on the driver side fender support. The terminal with the red wire is the battery positive. Remove both fuses in the BJB before removing the cover to the rear power point. Make sure load devices can be turned off and are switched off when reinserting the fuses.

⚠ **WARNING:**

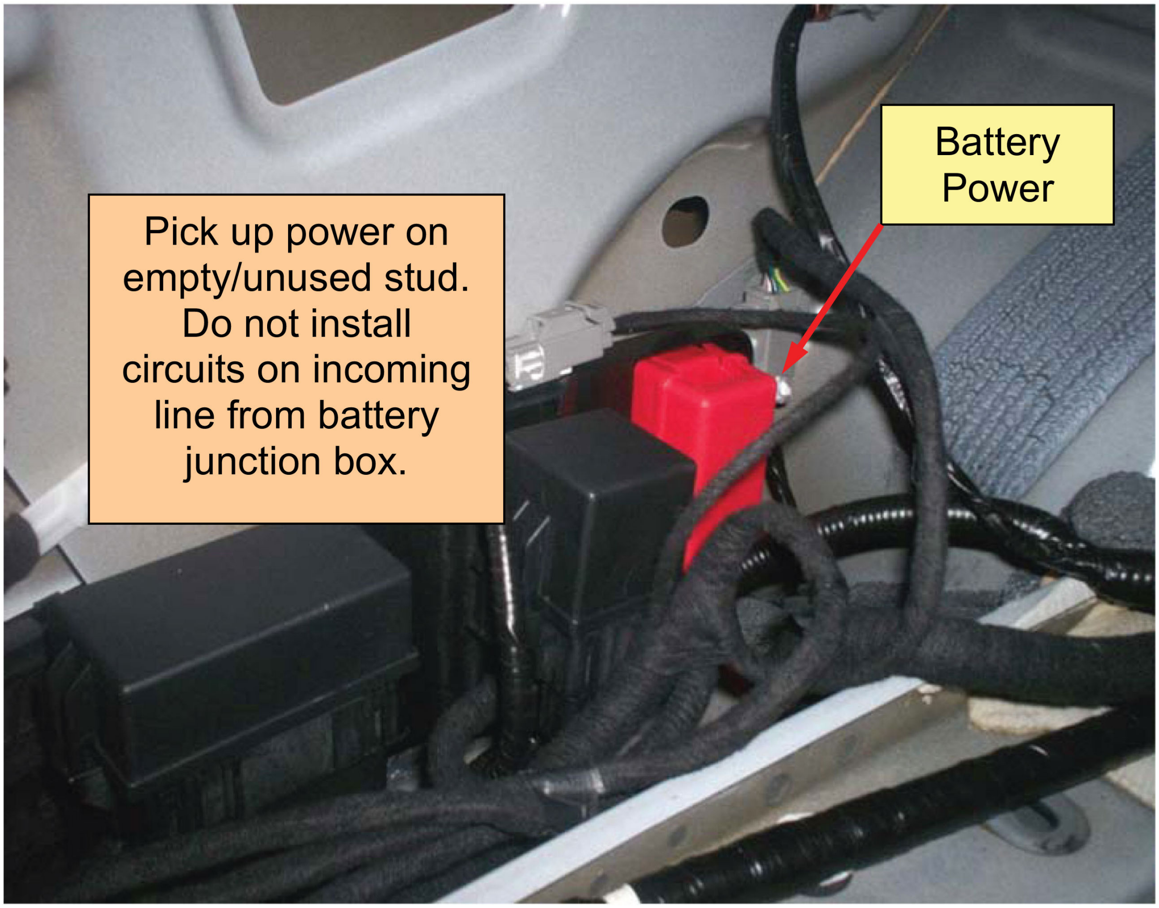
Under no circumstance should the rear power access point cover be removed without first removing the battery junction box (BJB) fuses #1 an #2. Removing the cover without removing the fuses could result in an electrical hazard. Turn off load devices before inserting the fuses. Failure to follow these instructions may result in personal injury.

It will be necessary to remove trunk lockable storage if equipped, to access rear power point section 4.



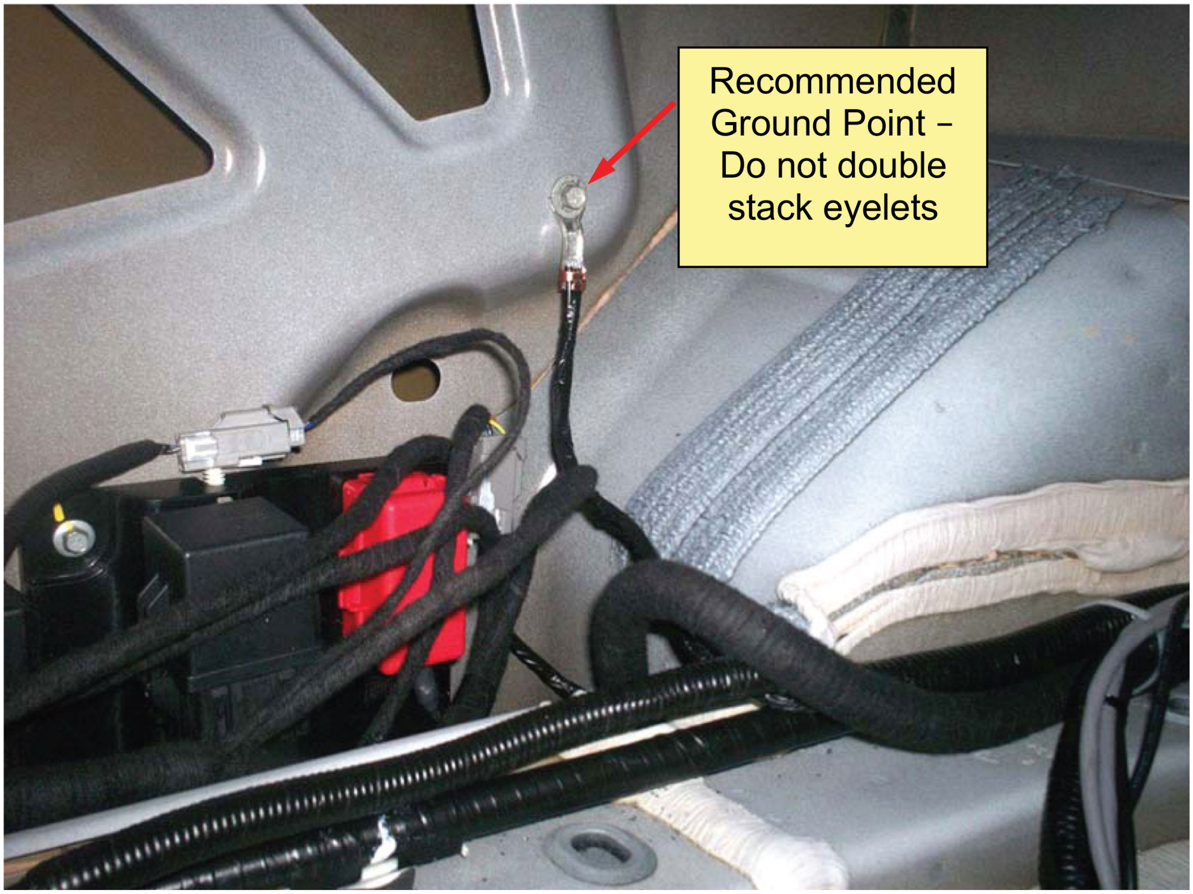
N0141041

Section 2: Electrical


Pick up power on empty/unused stud. Do not install circuits on incoming line from battery junction box.
Battery Power

N0141043

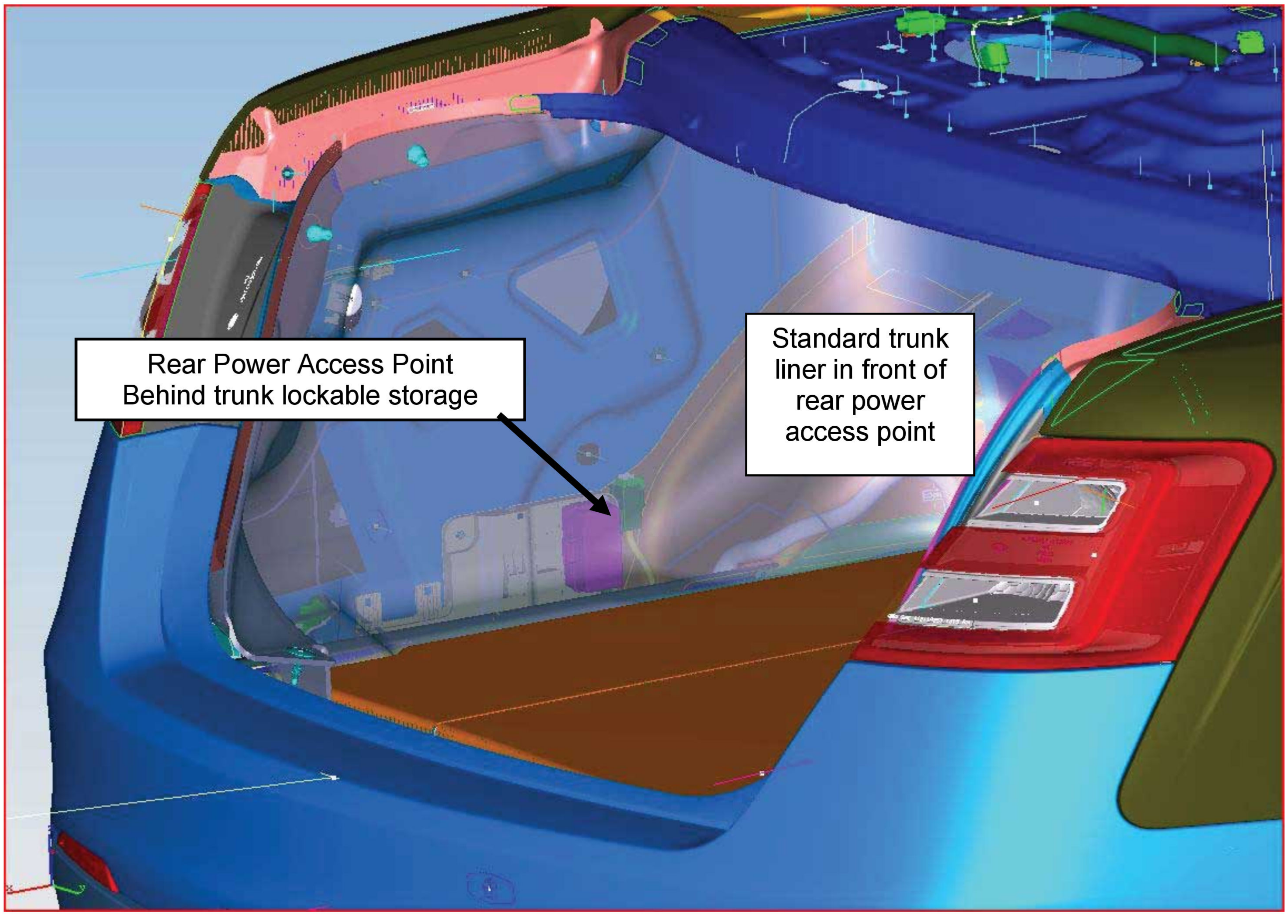
Section 2: Electrical


Recommended Ground Point – Do not double stack eyelets

N0141044

Sedan Interceptor with standard trunk liner

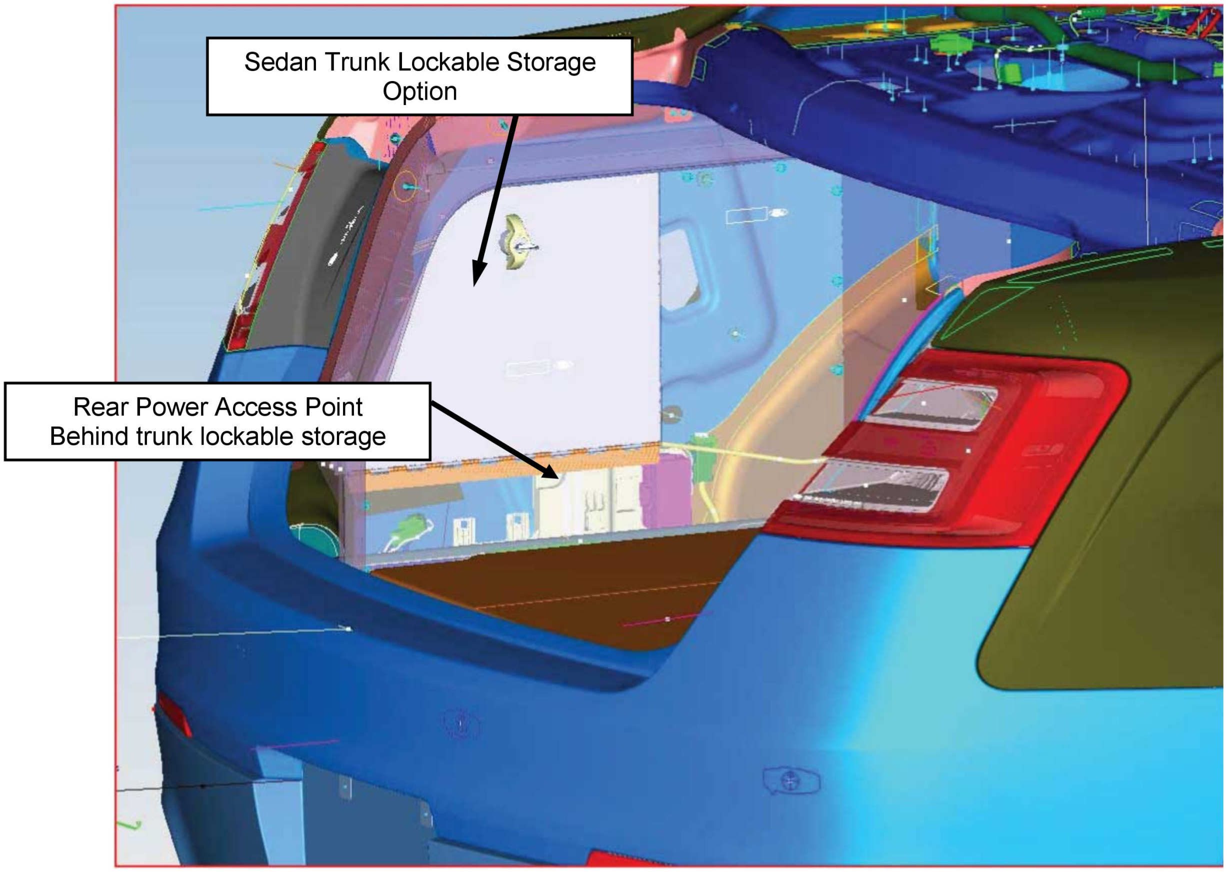
Section 2: Electrical


Rear Power Access Point
Behind trunk lockable storage
Standard trunk liner in front of rear power access point

N0141042

Sedan Interceptor with optional lockable trunk storage

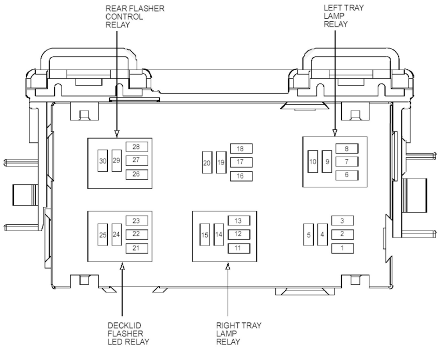
Section 2: Electrical


Sedan Trunk Lockable Storage Option
Rear Power Access Point Behind trunk lockable storage

N0141046

Section 2: Electrical

Sedan — Trunk Relay Center


REAR FLASHER CONTROL RELAY
LEFT TRAY LAMP RELAY
30
29
28
27
26
20
19
18
17
16
10
9
8
7
6
25
24
23
22
21
15
14
13
12
11
5
4
3
2
1
DECKLID FLASHER LED RELAY
RIGHT TRAY LAMP RELAY

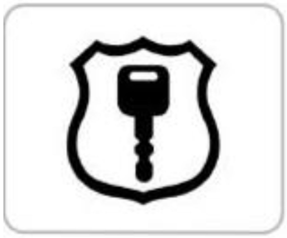
N0145265

Sedan — My Fleet Management

Allows configuration of following functions using an Integrated Diagnostic System (IDS) service tool

- Ability to set vehicle maximum speed from 90 MPH to the factory maximum speed setting.
- Ability to set maximum radio volume from 0% to 100%.

NEW Sedan/Utility Police Idle System



N0171988

Illuminates when Police Idle System is armed and active.

The system allows you to leave the engine running and prevents your vehicle from unauthorized use when you are outside of your vehicle. When you remove the key from the ignition. The engine remains idling.

Switching the System On

1. With your vehicle running and the transmission in park (P). Press the button on the instrument panel. A warning lamp illuminates to confirm the system is on.
2. Switch the ignition off and remove the key.

When the system is on:

- The power window switches are disabled and the windows remain in their current state.
- The power door lock controls are disabled and all doors remain in their current locking state.
- The liftgate or luggage compartment switches are disabled.

NOTE:
When the system is on, you can use the key blade to lock and unlock your vehicle.

Switching the System Off

- Tun the key to the run position.
- Press the button on the instrument panel.

NOTE:

Section 2: Electrical

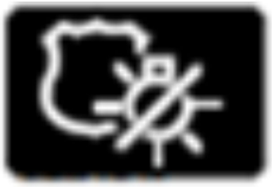
If you switch the system off before switching the ignition to the run position your vehicle shuts down.

DECOMMISSIONING REQUIREMENTS

Ford Motor Company has implemented a decommissioning process of Ford-provided police features. It is the responsibility of the owner to complete the decommissioning of the vehicle in compliance with any state regulations prior to initial sale to the public sector. Authorized personnel must use a diagnostic scan tool to decommission police idle.

Message	Action
Police Idle System Not Available	Displayed when the Police Idle System conditions are not correct for proper operation
Police Idle System Fault	Displayed when there is a fault detected in the Police Idle System and the system is not active
Police Idle System Fault Restart Engine	Displayed when there is a fault detected in the Police Idle System and the system is active
	Displayed when the Police Idle System is active

New Sedan/Utility Silent Mode (If Equipped)



N0171989

You can switch on Silent Mode in the information display. When you enable Silent Mode, the following features may be disabled:

- Welcome/farewell strategy
- Courtesy lighting and backlighting
- Daytime running lamps

The daytime running lamps turn on when:

1. The ignition is switched to the on position
2. The lighting control is in the off position, parking lamps position or the autolamps position, and the sensor detects daylight.
3. Your vehicle is in drive (D)

NOTE:
You can switch the daytime running lamps on or off by selecting Police Silent Mode through the information display.

NOTE:
In markets where daytime running lamps are mandated by law, Silent Mode will not disable the daytime running lamps

Section 2: Electrical

NOTE:
When Silent Mode or Dark Car Mode is enabled, the courtesy lamp will not turn on.

DECOMMISSIONING REQUIREMENTS

Ford Motor Company has implemented a decommissioning process of Ford-provided police features. It is the responsibility of the owner to complete the decommissioning of the vehicle in compliance with any state regulations prior to initial sale to the public sector. Authorized personnel must use a diagnostic scan tool to decommission Silent Mode.

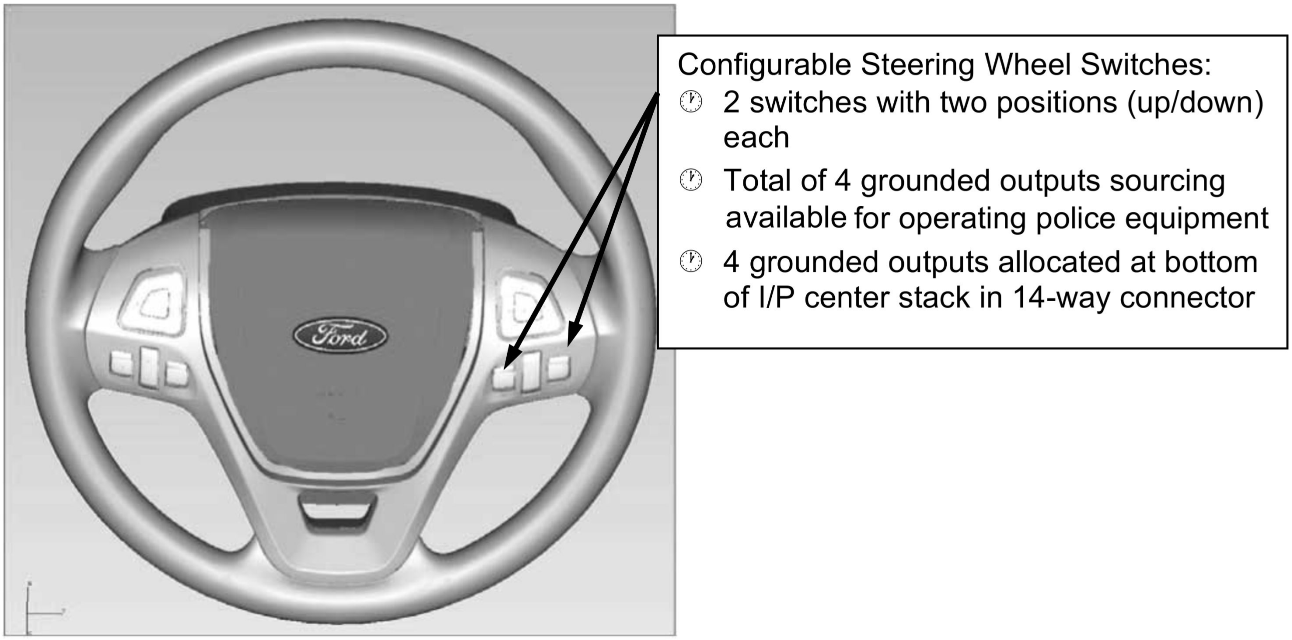
Sedan — Courtesy Lamp Disable (Dark Mode)

This option offers deletion of the illuminated entry function. Upon vehicle power-up, the Smart Junction Box (SJB) will not provide interior lighting during entry or exit of the vehicle. The interior lighting will, however, still operate on demand whenever the dome lamp switch is active. If the dark car feature is necessary, the assembly plant enables this feature through the SJB. The vehicle can be configured by entering diagnostics, enabling/disabling the courtesy lamps and then exiting diagnostics.

Use the following steps to enable or disable the courtesy lamps:

1. Connect the IDS (at the latest calibration) to the vehicle via the DLC.
2. Allow the IDS to ID the vehicle. Select the Tool Box.
3. Select Module Programming, Programmable Parameters, Interior Lighting, then the TIC.
4. A screen will come up to remind you to turn the ignition on.
5. Select Dark Enable and the TIC.
6. During configuration the lights will flash and the system changes from Disabled to Enabled.
7. Final Screen: Module configuration complete, check/clear any DTCs that may have been set.

Sedan — Steering Wheel Switches



Configurable Steering Wheel Switches:

- 2 switches with two positions (up/down) each
- Total of 4 grounded outputs sourcing available for operating police equipment
- 4 grounded outputs allocated at bottom of I/P center stack in 14-way connector

N0141056

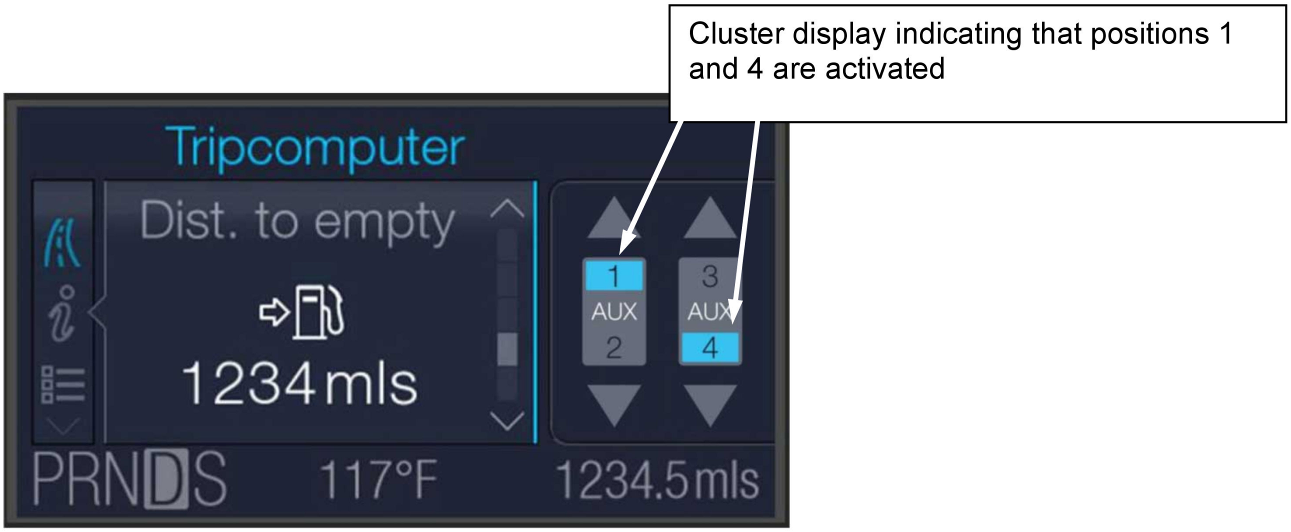
Steering Wheel Operation

- Two switches are available for configuration as indicated above.
- Each switch has 2 positions (up/down).

Section 2: Electrical

- Four total ground side switching outputs are available in 14-way connector located behind the close out panel at the bottom of the Electronic Finish Panel (EFP).
- Any combination or all of the four outputs can be turned on simultaneously.
- To activate a switch/output, push the desired switch in the direction of the label either above or below the switch.
- To deactivate that function, push the desired switch in the same direction as was used when activating the output.
- Cluster display will illuminate the switch/position while activated.

Sedan — Steering Wheel Switch Cluster Display



Cluster display indicating that positions 1 and 4 are activated

N0141057

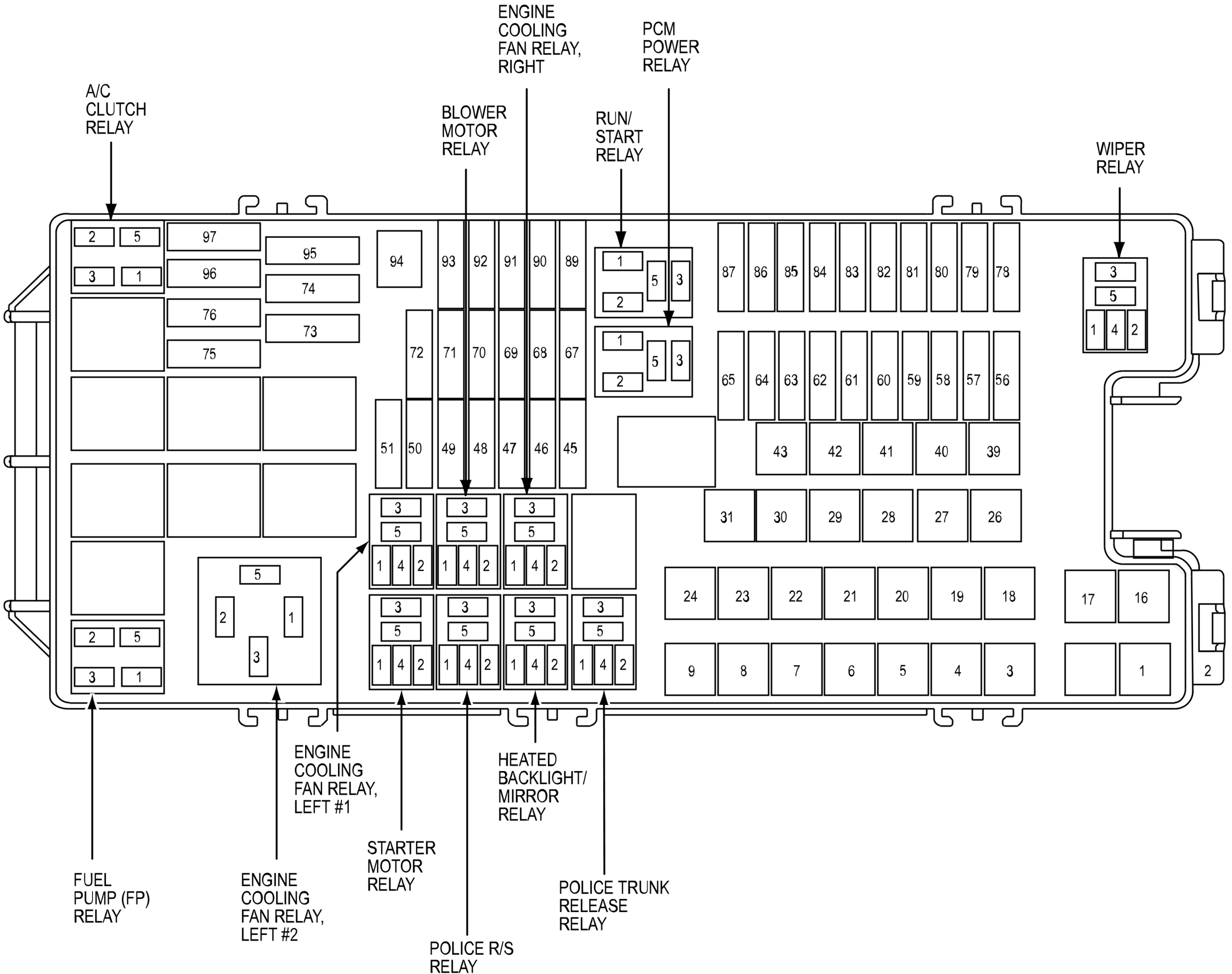
Fuse Information

If electrical components in the vehicle are not working, a fuse may have blown. Blown fuses are identified by a broken wire within the fuse. Check the appropriate fuses before replacing any electrical components.

NOTE:
Always replace a fuse with one that has the specified amperage rating. Using a fuse with a higher amperage rating can cause severe wire damage and could start a fire.

Section 2: Electrical

Sedan — Battery Junction Box


A/C CLUTCH RELAY
ENGINE COOLING FAN RELAY, RIGHT
BLOWER MOTOR RELAY
PCM POWER RELAY
RUN/ START RELAY
WIPER RELAY
97
96
76
75
95
74
73
94
93
92
91
90
89
72
71
70
69
68
67
51
50
49
48
47
46
45
87
86
85
84
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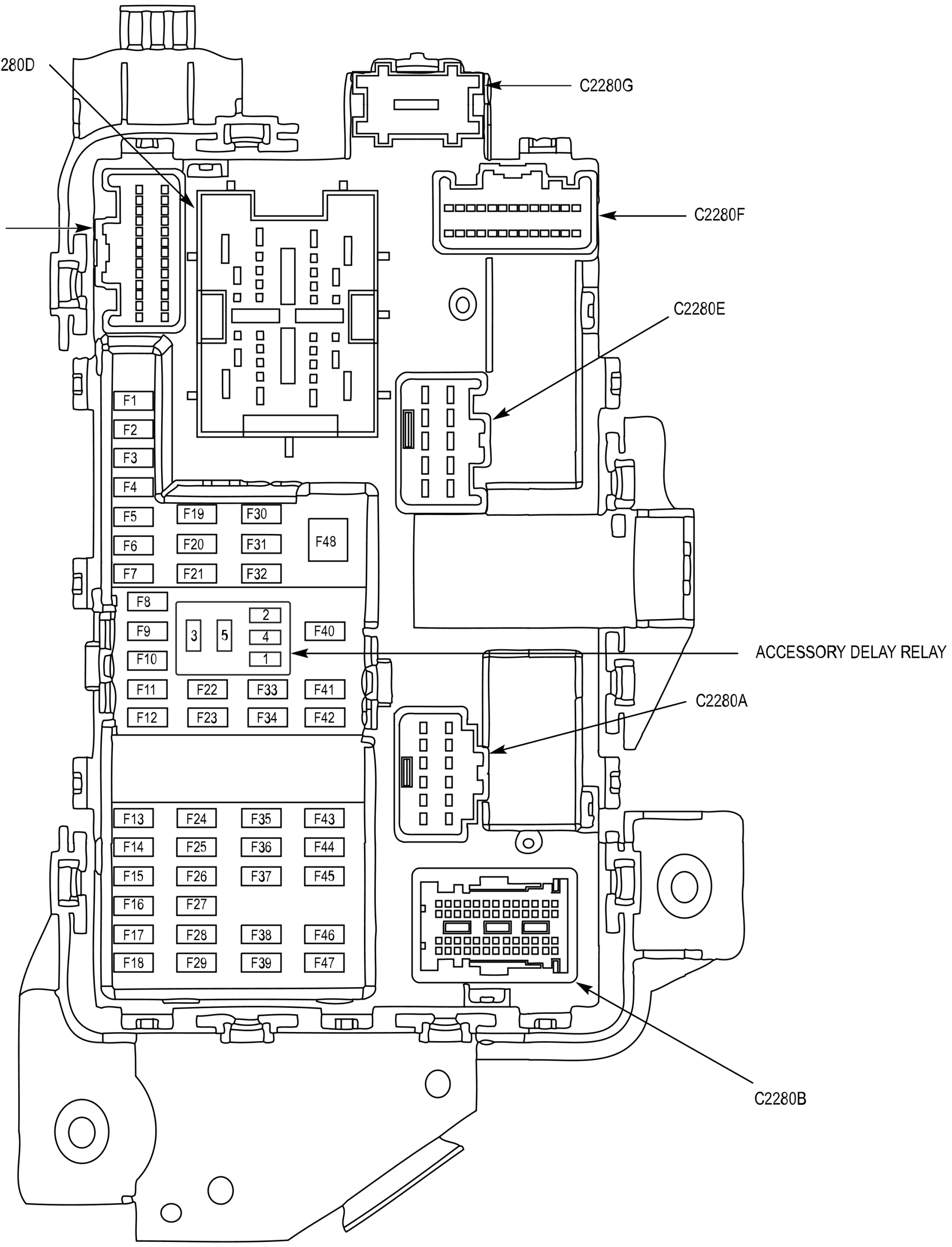
56
43
42
41
40
39
31
30
29
28
27
26
24
23
22
21
20
19
18
17
16
9
8
7
6
5
4
3
1
2
ENGINE COOLING FAN RELAY, LEFT #1
HEATED BACKLIGHT/ MIRROR RELAY
STARTER MOTOR RELAY
POLICE TRUNK RELEASE RELAY
FUEL PUMP (FP) RELAY
ENGINE COOLING FAN RELAY, LEFT #2
POLICE R/S RELAY

N0142685

Section 2: Electrical

Sedan — Body Control Module


C2280D
C2280G
C2280C
C2280F
C2280E
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
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F30
F31
F32
F33
F34
F35
F36
F37
F38
F39
F40
F41
F42
F43
F44
F45
F46
F47
F48
2
3
5
4
1
ACCESSORY DELAY RELAY
C2280A
C2280B

N0142686

⚠ **WARNING:**
Always disconnect the battery before servicing high current fuses.

Section 2: Electrical

⚠ **WARNING:**

To reduce risk of electrical shock, always replace the cover to the power distribution box before reconnecting the battery of refilling fluid reservoirs. The power distribution box is located in the engine compartment. It has high current fuses that protect your vehicle's main electrical systems from overloads. If the battery has been disconnected and reconnected, refer to Changing the Vehicle Battery in the Maintenance chapter.

Mating connectors, terminals and subcomponent availability are managed for Ford Fleet and Pool Accounts through Ford Component Sales. Ford Component Sales, LLC (FCS) uses Globe Component Products or Dynamic Supply Solutions (DSS) to process and coordinate all Fleet and Pool Purchase Orders. By using Globe or DSS, FCS is able to offer the Fleet and Pool community reasonable minimum order quantities while still having the benefit of Ford Production pricing benefits.

Electrical Component Resource

See part numbers and supplier in the chart below to obtain terminals and connectors.

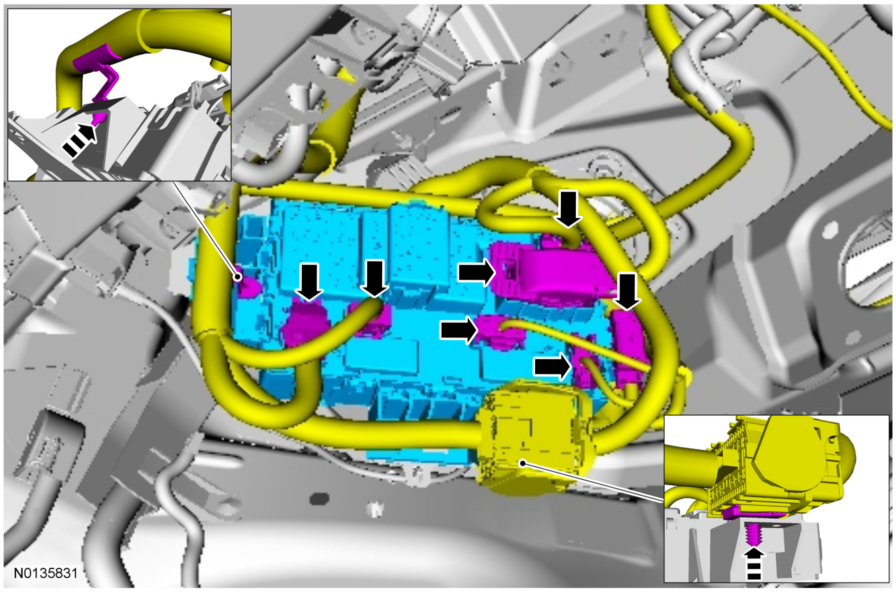
Section 2: Electrical

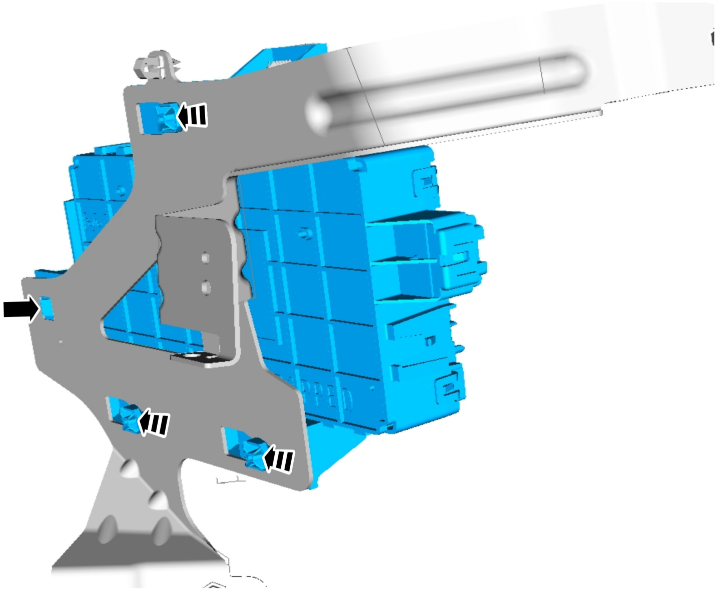
POLICE INTERCEPTOR CONNECTOR FORD TO SUPPLIER PART NUMBER CROSS REFERENCE MATRIX					
COMPONENT IN VEHICLE LOCATION	FORD COMPONENT CONNECTOR PART NUMBER	SUPPLIER	SUPPLIER PART NUMBER	UPFIT HARNESS SIDE PART NUMBER	SUPPLIER PART NUMBER
ION Grill LEDs @ Behind Grille Light Heads (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
ION Rear CHMSL LEDs @ Light Heads (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
ION Rear Decklid/Liftgate LEDs @ Light Heads (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
VERTEX Front Corner LEDs @ Headlight Modules (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
VERTEX Rear Corner LEDs @ Rear Taillights (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
PARK/TURN/WARN LEDs @ Headlight Modules (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
PARK/TURN/WARN LEDs @ Headlight Module (3 Pin)	7T4T-14A464-BA (000)	MOLEX	33471-0301	7T4T-14A624-AA (000)	33481-0301
Siren Speaker @ Driver Side Behind Fascia(2X2 Pin)	5W7T-14A464-CA (004)	MOLEX	33472-4416	5W7T-14A624-BA (002)	33482-0416
WARN CONTROL MODULE @ Underhood near Coolant Bottle (4X2 Pin)	5W7T-14A464-GA (000)	MOLEX	33472-0801	5W7T-14A624-DA (000)	33482-0801
Relay Center & CENCOM (5X2 Pin)	4S7T-14489-VJA	YAZAKI	7283-6455-40	4S7T-14A459-VJA	7282-6455-40
At CENCOM (2X2 Pin)	4S7T-14489-VDA	YAZAKI	7283-6449-40	4S7T-14A459-VDA	7282-6449-40
At Cooling Fan (2 Pin)	4S7T-14489-VAA	YAZAKI	7283-6443-40	4S7T-14A459-VAA	7282-6443-40
Siren Speaker @ Instrument Panel/Center Stack (2x2 Pin)	4S7T-14A459-VDA	SUMITOMO		4S7T-14489-VDA	
Power/Vehicle Signals @ Instrument Panel/Center Stack (2x7 Pin)	4S7T-14459-YRA	SUMITOMO		4S7T-14489-YRA	
Police Lights@ Instrument Panel Center Stack (2x7 Pin)	BU5T-14A459-BA	SUMITOMO		4L3T-14489-AC	
Police Radio Connector @ Instrument Panel/Center Stack (2x2 Pin)	4S7T-14489-VDA	SUMITOMO		4S7T-14A459-VDA	
40A Auxiliary Power @ Instrument Panel/Center Stack (3x3 Pin)	BU5T-14A459-AA	YAZAKI		4S7T-14489-YMA	
WIRE GAUGE or Part Number	COMPONENT TERMINAL PART NUMBER	SUPPLIER	SUPPLIER PART NUMBER	HARNESS TERMINAL PART NUMBER	SUPPLIER PART NUMBER
Based on wire size					
14 , 16	33012-2001	MOLEX	33012-2001	33000-0001	33000-0001
18 , 20	33012-2002	MOLEX	33012-2002	33000-0002	33000-0002
22	33012-2003	MOLEX	33012-2003	33000-0003	33000-0003
Based on wire size					
16 , 18	7116-4101-02	YAZAKI	7116-4101-02	7114-4101-02	7114-4101-02
20 , 22	7116-4100-02	YAZAKI	7116-4100-02	7114-4100-02	7114-4100-02
4S7T-14459-YRA / 4S7T-14489-YRA	Terminals for Pins: 1,7,8 97BG-14474-BCA 2,3,4,5,6 97BG-14474-AAB	SUMITOMO			
BU5T-14A459-BA / 4L3T-14489-AC	Terminals for Pins: 1,2,7 3F2T-14474-RA 6,14 3F2T-14474-SA 9 97BG-14474-BBA	SUMITOMO			
4S7T-14489-VDA / 4S7T-14A459-VDA	2TAD-0.75 1.5MM FLAT				
For 40A Auxiliary Power Connector	97BG-14421-CCA	YAZAKI			

N0146595

Sedan — Body Control Module

The Body Control Module (BCM) is located behind the steering column opening panel. It acts as a gateway module by receiving information in one format and transmitting it to other modules using another format. For example, the BCM receives the vehicle speed data from the PCM over the HS-CAN. The BCM converts the data into a MS-CAN message and sends (gateways) the message to other network modules such as the HVAC module. This enables network communication between modules that do not communicate using the same network (HS-CAN or MS-CAN).





Section 2: Electrical

Sedan — Electrical Component Resource

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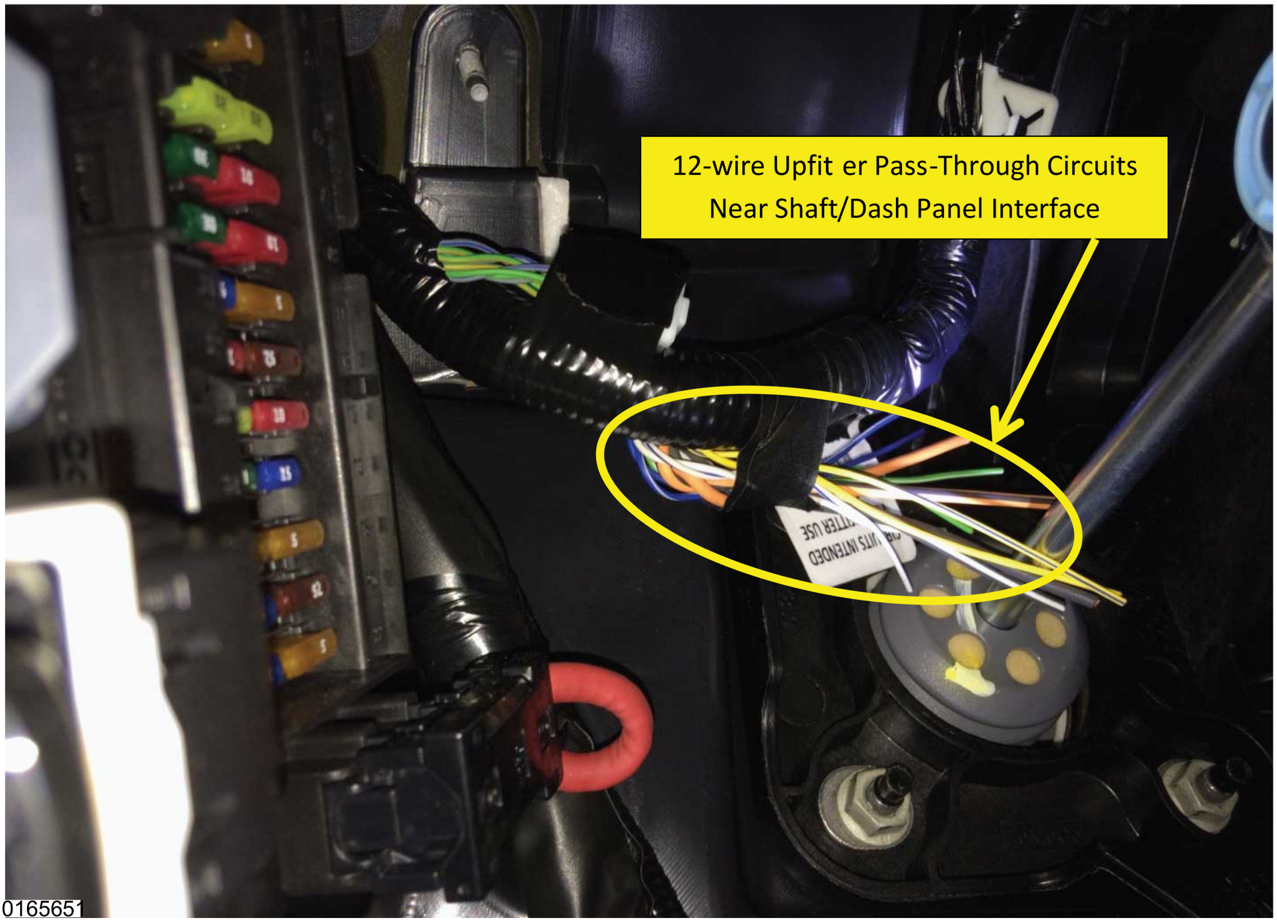
NEW Utility Upfitter Wire Bundle Dash Panel Pass-Through

Certain Police Interceptor vehicles come equipped with auxiliary dash panel pass-through wire circuits (upfitter auxiliary) depending on selected option packages.

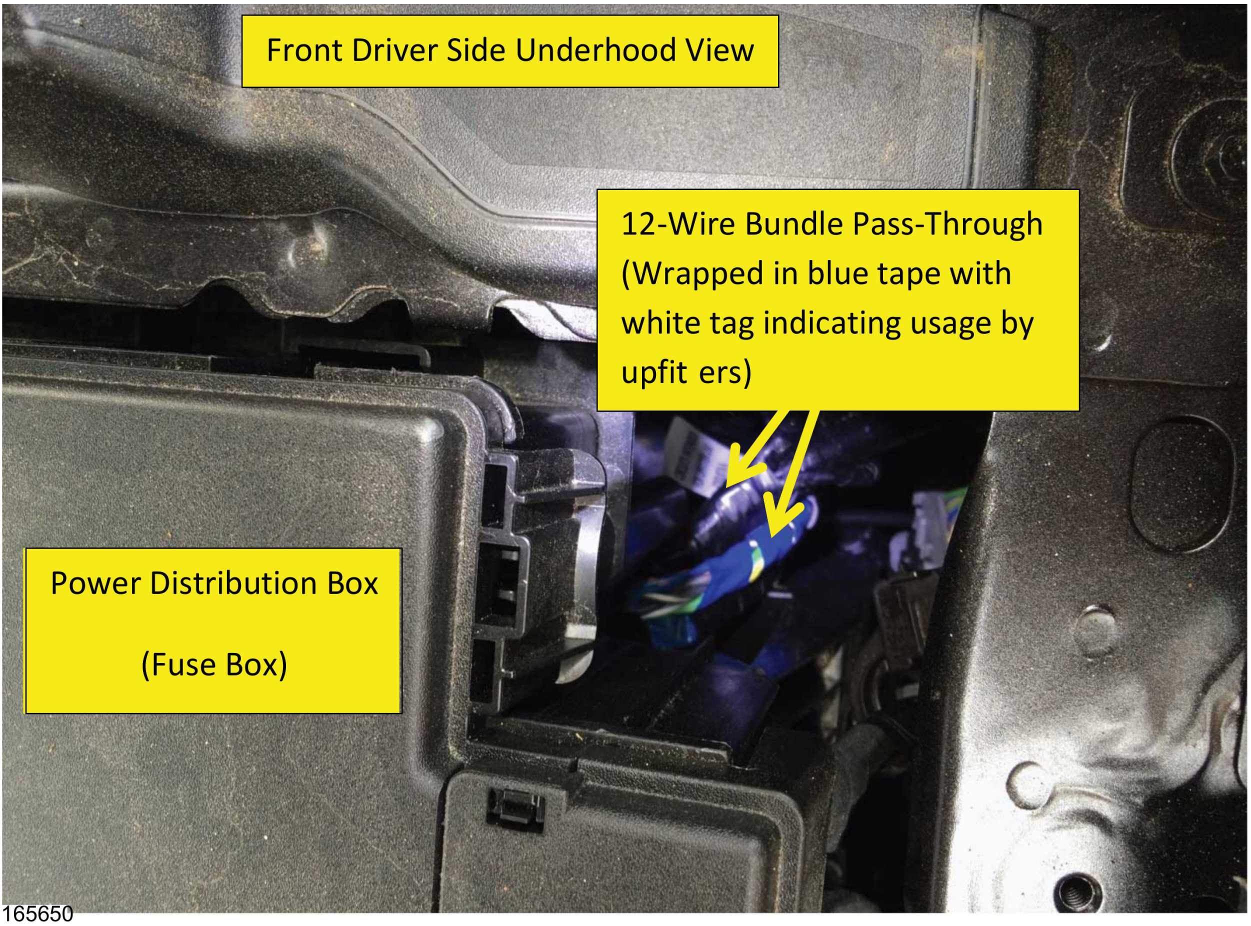
New for 2016 MY, the **standard** upfitter auxiliary pass-through wire circuits (6 twisted pairs) can be used by the vehicle modifier.

- The vehicle interior end of the auxiliary upfitter circuits is found beneath the instrument panel near the Body Control Module (BCM).
- The underhood end of the Aux Upfitter Circuits is found taped to a harness underhood near the Battery Junction Box (BJB).


12-wire Upfitter Pass-Through Circuits
Near Shaft/Dash Panel Interface

N0165651

Section 2: Electrical


Front Driver Side Underhood View
12-Wire Bundle Pass-Through (Wrapped in blue tape with white tag indicating usage by upfit ers)
Power Distribution Box
(Fuse Box)

N0165650

1. Twisted Pair A (20AWG)

   White
   White / Blue
2. Twisted Pair B (20AWG)

   Yellow
   Yellow / Black
3. Twisted Pair C (20AWG)

   Green
   Green / White
4. Twisted Pair D (20AWG)

   Blue
   Blue / White
5. Twisted Pair E (14AWG)

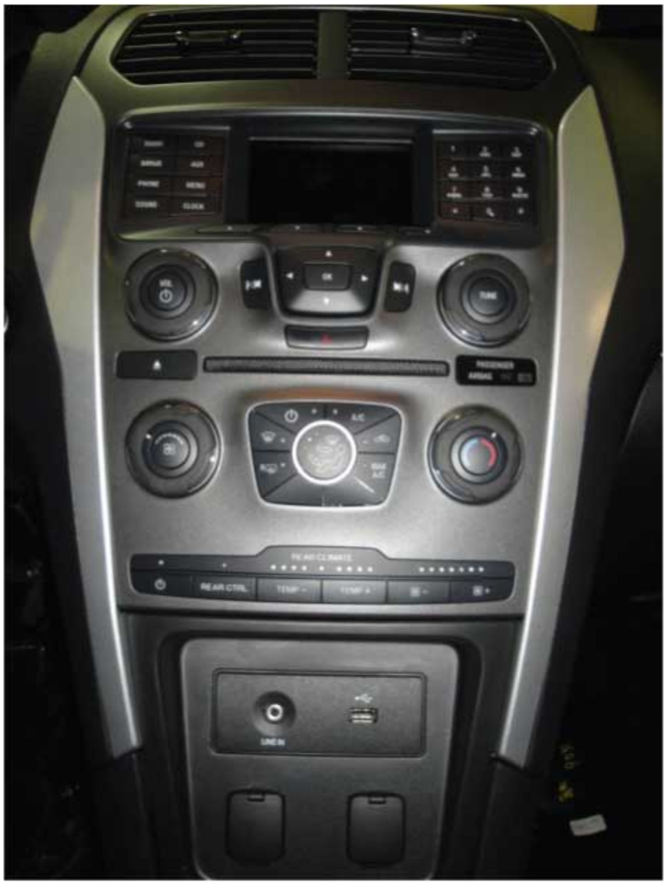
   Orange
   Orange / Black
6. Twisted Pair E (14AWG)

   Black
   Black / White

Section 2: Electrical

Utility — Power and Vehicle Signal Access Areas

- Located behind lower center instrument panel trim panels
- Siren speaker at instrument panel center stack (4 Pin)
- Power/vehicle signals at instrument panel center Stack (14 Pin)
- Police lights at instrument panel center stack (14 Pin)
- Police radio connector at instrument panel/center stack (4 Pin)
- 40A auxiliary power at instrument panel/center stack (6 Pin)

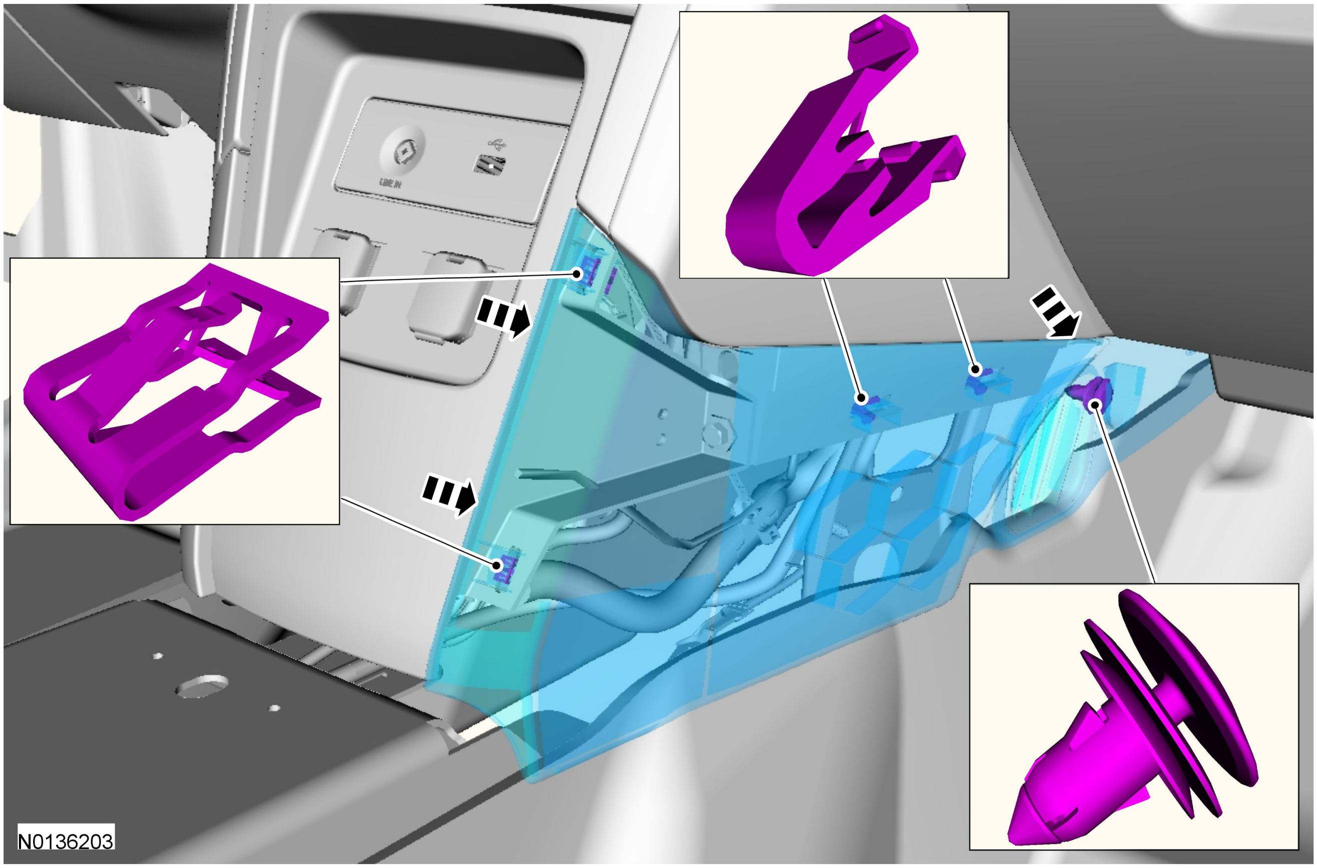


N0151524

Utility — Lower Center Instrument Panel Removal

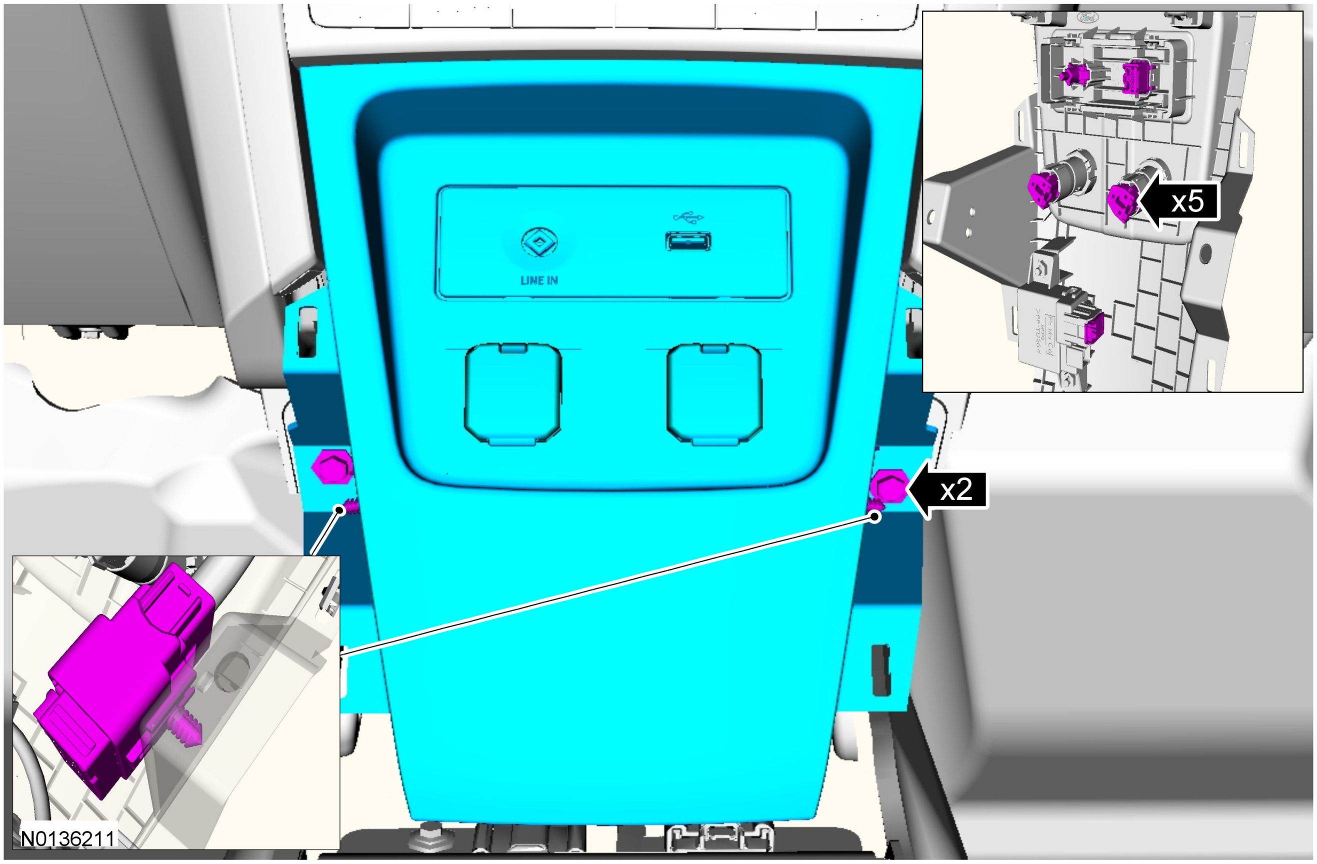
1. Remove the driver and passenger side lower center instrument panel finish panels.

Section 2: Electrical



2. Remove the 2 fasteners then carefully remove panel.

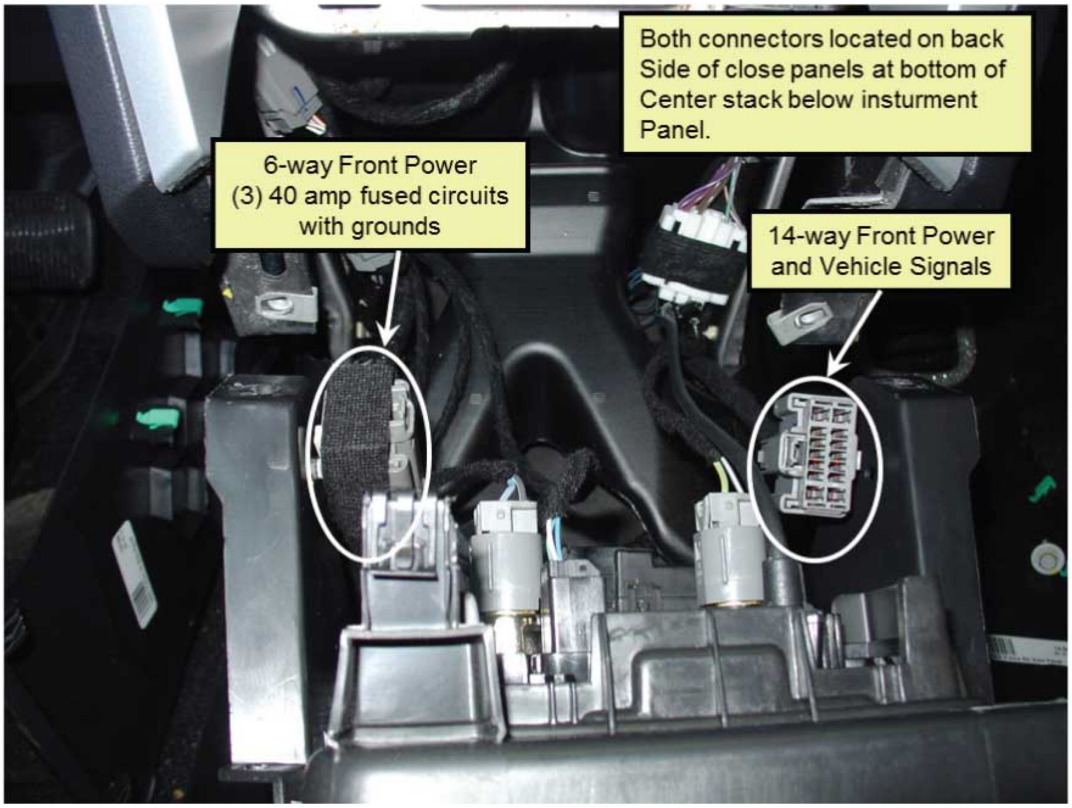
Section 2: Electrical


LINE IN
x5
x2
N0136211

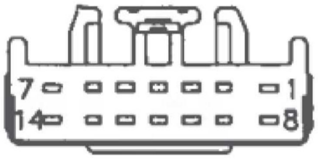
Section 2: Electrical

Front Power And Vehicle Signals Access Area

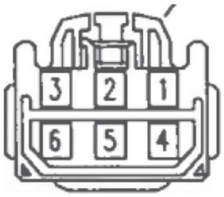
Front Power and Vehicle Signals Access Area


Both connectors located on back Side of close panels at bottom of Center stack below insturment Panel.
6-way Front Power (3) 40 amp fused circuits with grounds
14-way Front Power and Vehicle Signals

N0151483



Part# 3U2Z-14S411-BJAC



Part# 3U2Z-14S411-HEA

N0151470

Connector View For Connector 3U2Z-14S411–HEA (continued on the next page).

Pin Number	Description	Fuse	Wire Color
1	B+ (40A)	BJB #40	VT-RD
2	B+ (40A)	BJB #6	BN-RD

Section 2: Electrical

(Continued)

3	B+ (40A)	BJB #16	VT-RD
4	Ground	IP Tunnel	BK-BJ
5	Ground	IP Tunnel	BK-BJ
6	Ground	IP Tunnel	BK-BJ

Connector View For Connector 3U2Z- 14S411–BJAC.

Pin Number	Description	Fuse	Wire Color
1	B+ Feed #1 (20A)	IP #2	GY-RD
2	Steering Wheel Switch #1 Output (1A) Grnd	GNRL Function Module	GY-BN
3	Steering Wheel Switch #2 Output (1A) Grnd	GNRL Function Module	WH-VT
4	Steering Wheel Switch #3 Output (1A) Grnd	GNRL Function Module	GN-BN
5	Steering Wheel Switch #4 Output (1A) Grnd	GNRL Function Module	YE-GY
6	Start (2A)	BJB #95	BN-BU
7	Run/Start #1 (20A)	BJB #73	WH-BN
8	B+ Feed #2 (20A)	IP #32	BU-RD
9	Vehicle Speed Output (VSS)	PCM	VT-OG
10	Delay Accessory (15A)	IP #17	GN-VT
11	B+ Feed #2 (15A)	IP #5	YE-RD
12	Park Detect Signal (Transmission)	Sifter GRND	GN
13	Driver Door Ajar Signal	IP #9 GRND	GN-VT
14	Run/Start #2 (20A)	IP #74	VT-BN

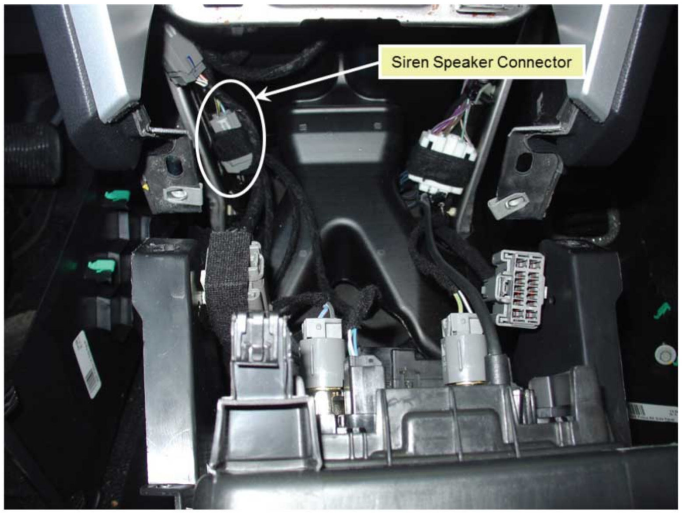
NOTE:
Fuse sizes are given to help locate the fuse in the PDB. Ford recommends that current be limited to 85% of the value: 20 Amp should be limited to 17 Amp 15 Amp should be limited to 12 Amp.

Park Detect: Sources a ground when the vehicle is in park. This circuit is capable of grounding 1 Amp.

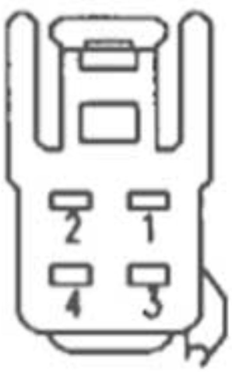
Driver Door Ajar: This circuit is a sense only grounded circuit when the door is closed. It is used to supply a module that has pull up resistors in its input.

Section 2: Electrical

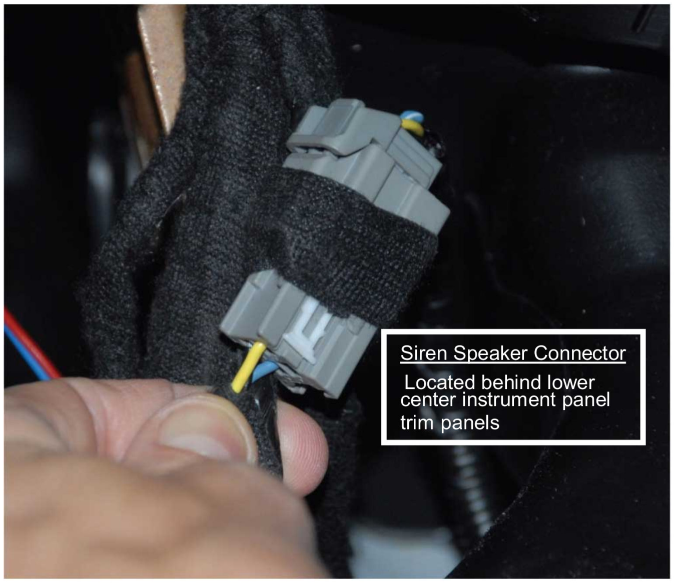
Utility — Siren Speaker Connector


Siren Speaker Connector

Siren Speaker Connector



Part # 3U2Z-14S411-LUB


Siren Speaker Connector
Located behind lower center instrument panel trim panels

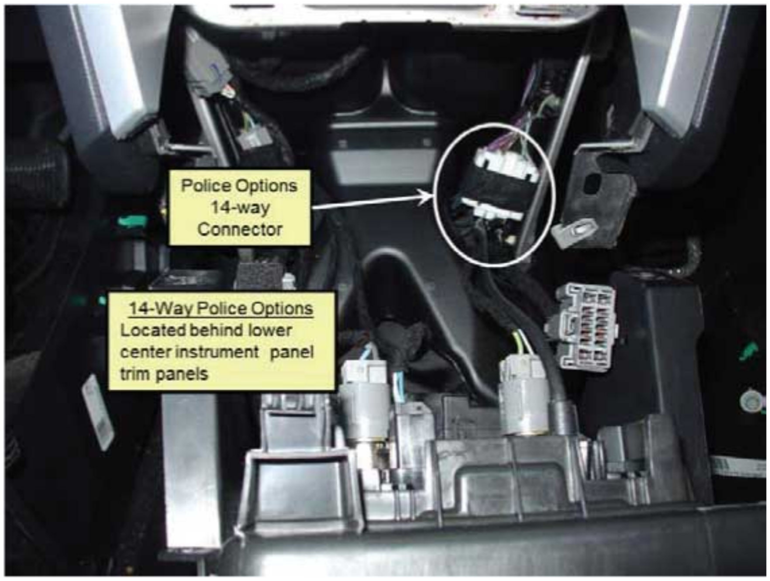
N0151517

Connector View For Connector 3U2Z-14S411–LUB.

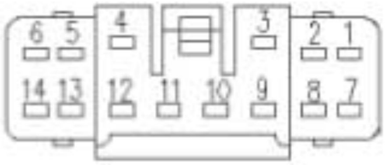
Pin Number	Description	Wire Color
1	Siren Driver Side Feed (+)	YE
2	Siren Shield Driver Side (-)	
3	Open Passenger Side Front (+)	
4	Siren Return Passenger Side Front (-)	BU-WH

Section 2: Electrical

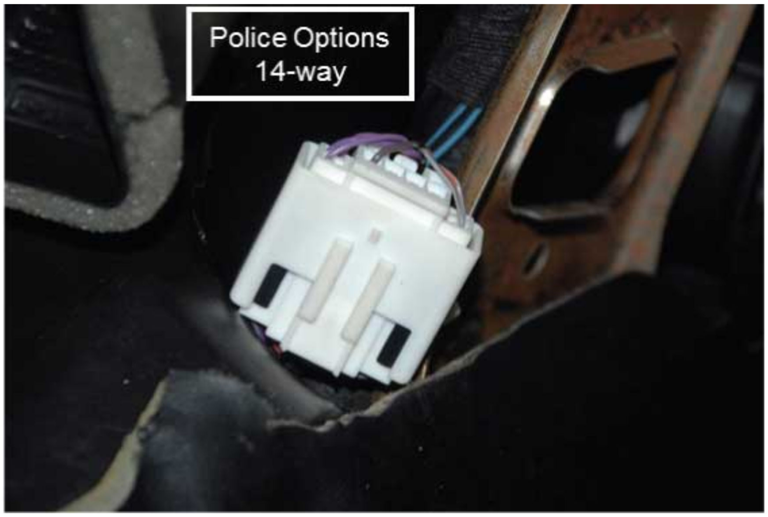
Utility — Police Options 14–Way Connector


Police Options 14-way Connector
14-Way Police Options
Located behind lower center instrument panel trim panels

Police Options 14-Way Connector


6
5
4
3
2
1
14
13
12
11
10
9
8
7

Part # CU2Z-14S411-APA


Police Options 14-way

N0151518

Connector View For Connector 3U2Z- 14S411–APA

Pin Number	Description	Wire Color
1	Wig Wag Control	VT
2	Front Corner LED Power Control	VT-OG
3	Front Flasher Power Control	BN-YE
4	Speaker (-) at Grille (Option)	GN-BU
5	Open	

Section 2: Electrical

(Continued)

6	Front Corner LED Light Sync	GY-OG
7	Dimmer	VT-GY
8	Brake Output Signal Ground	BU-OG
9	Speaker (+) at Grille (Option)	BN
10	Open	
11	Open	
12	Open	
13	Open	
14	LED Flash Pattern	GY-BN

Front WIGWAG Power: Supplies power to the wigwag connectors at the headlamps.

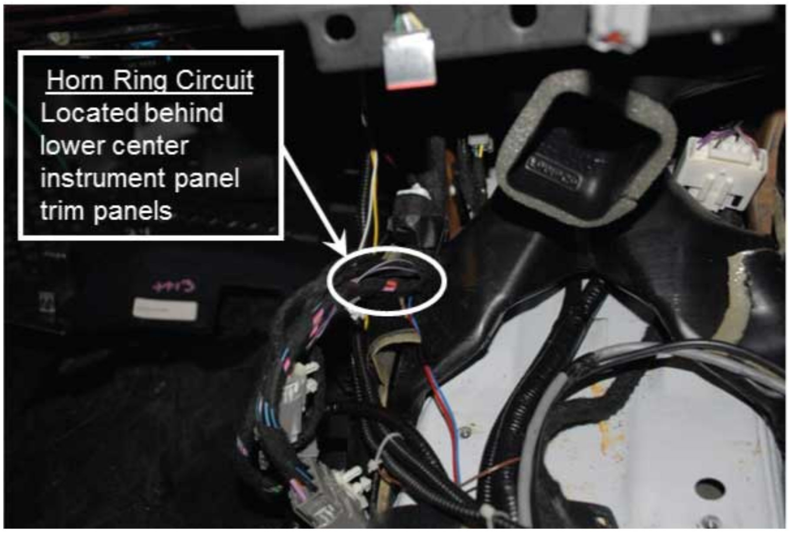
Front Flasher Power: Supplies power to the flasher relay.

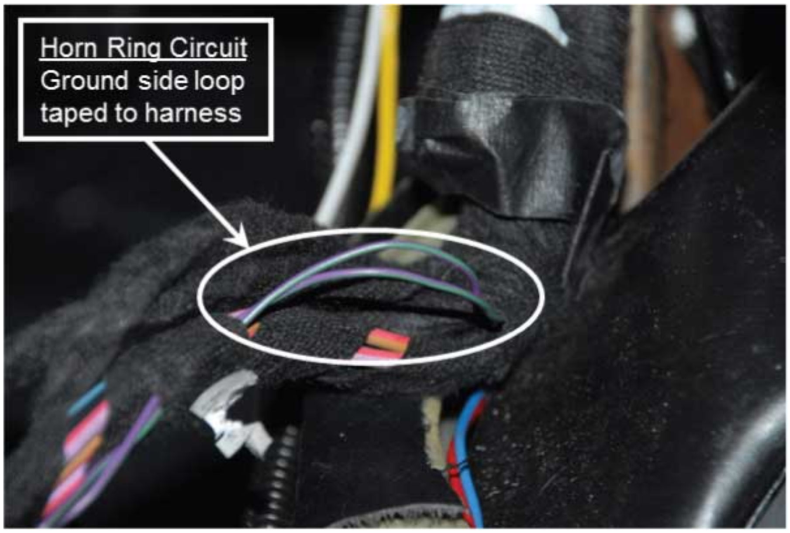
Dimmer: Circuit supplied to allow backlight dimming of aftermarket equipment.

Brake Output: Fused brake output.

Section 2: Electrical

Utility — Horn Ring Circuit

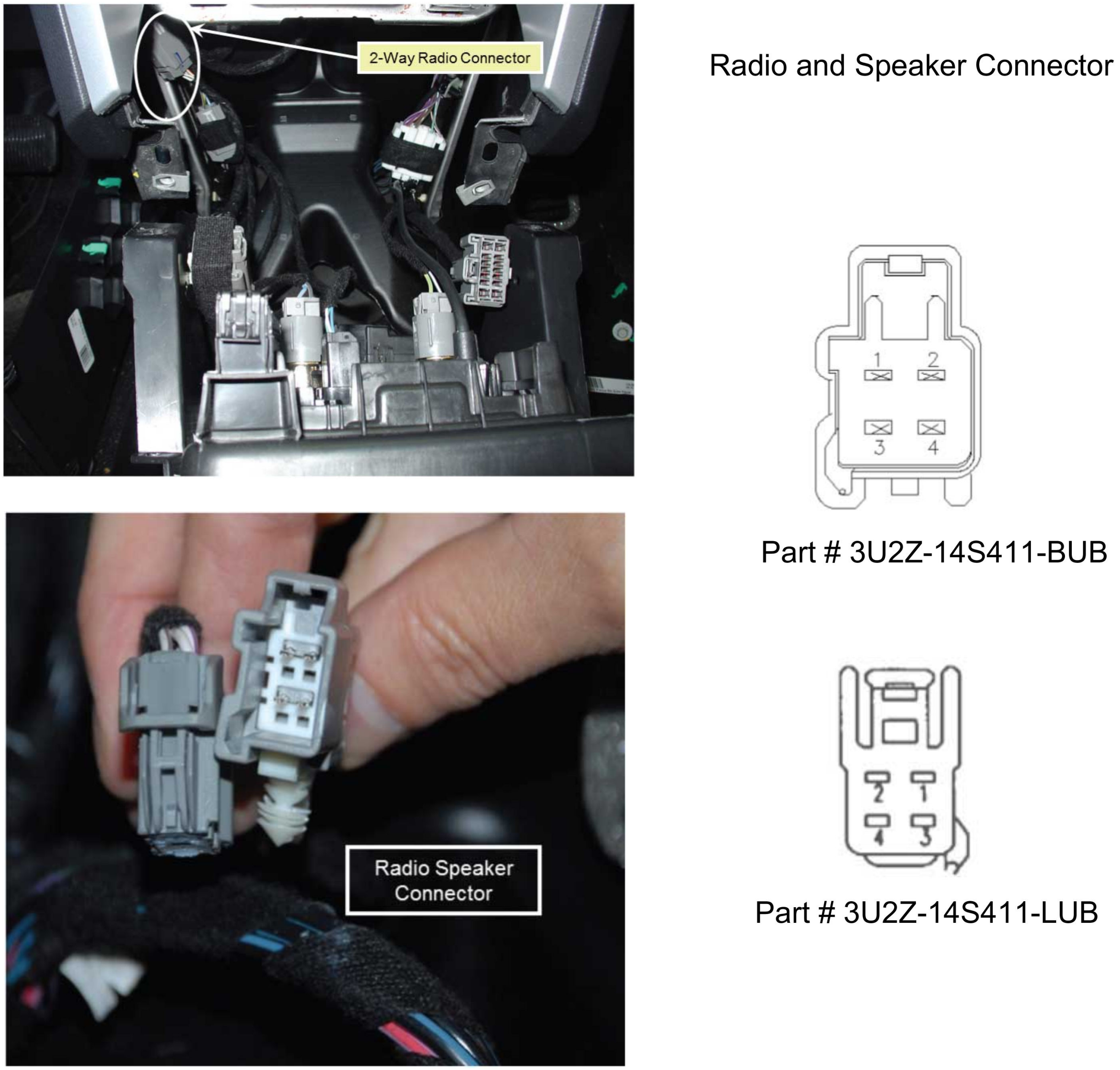

Horn Ring Circuit
Located behind lower center instrument panel trim panels


Horn Ring Circuit
Ground side loop taped to harness

N0151519

Section 2: Electrical

Utility — Radio And Speaker Connector

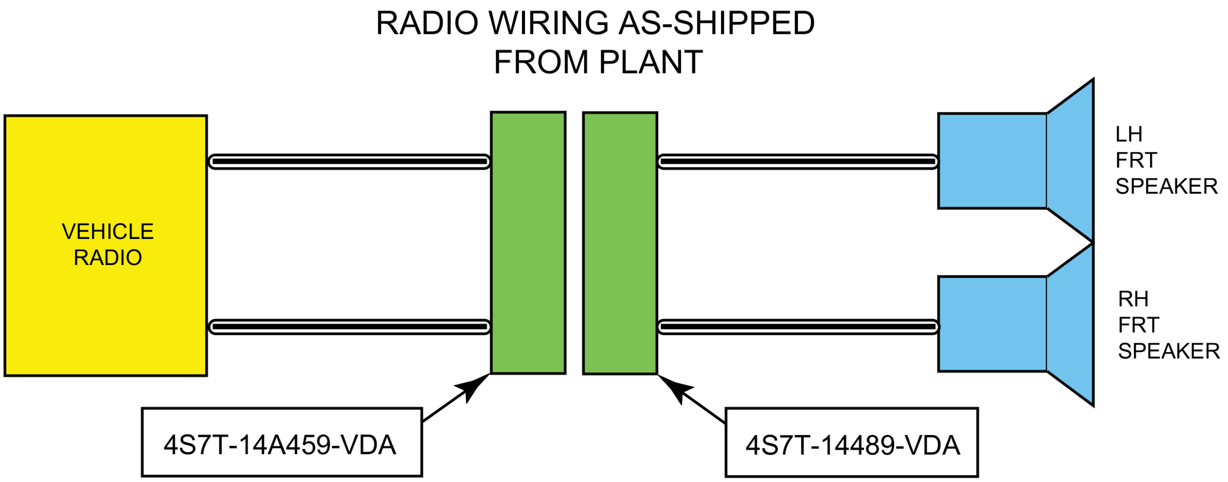

2-Way Radio Connector
Radio Speaker Connector
Radio and Speaker Connector
1
2
3
4
Part # 3U2Z-14S411-BUB
2
1
4
3
Part # 3U2Z-14S411-LUB

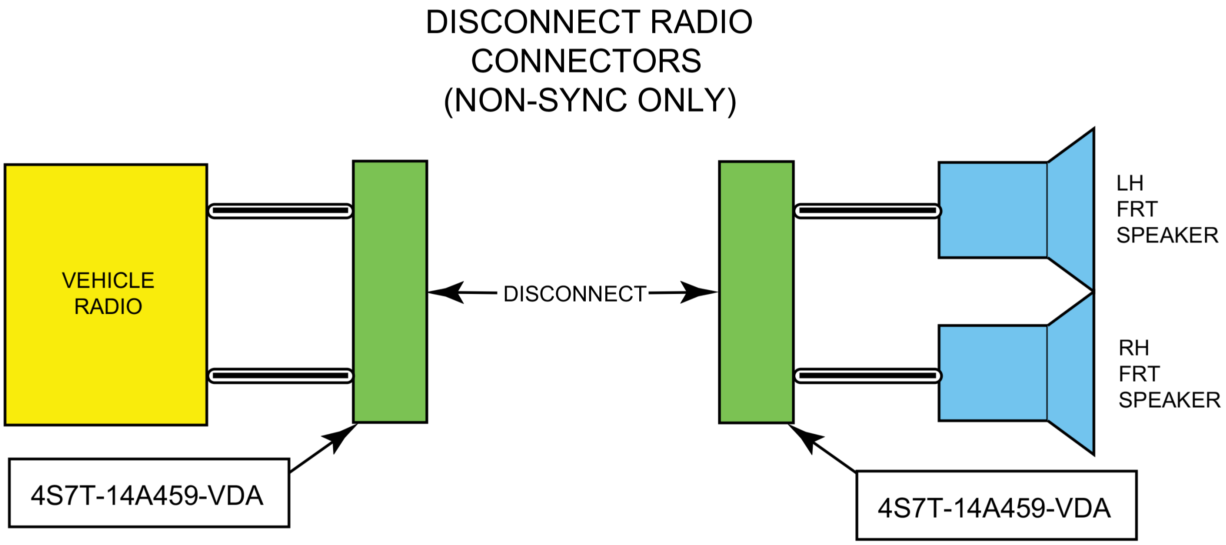
N0151516

Connector View For Connector 3U2Z- 14S411–LUB

Pin Number	Description
1	Driver Side Front Speaker (+)
2	Driver Side Front Speaker (-)
3	Passenger Side Front Speaker (+)
4	Passenger Side Front Speaker (-)

Section 2: Electrical

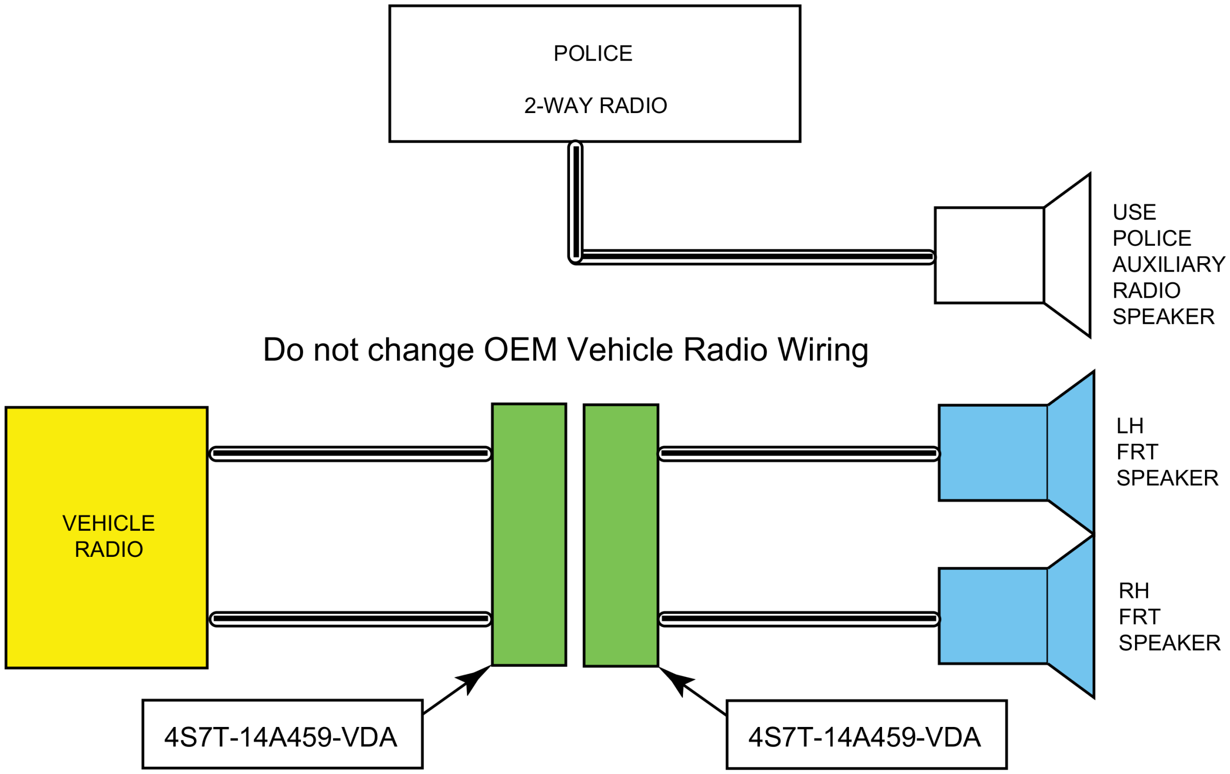

RADIO WIRING AS-SHIPPED
FROM PLANT
VEHICLE
RADIO
LH
FRT
SPEAKER
RH
FRT
SPEAKER
4S7T-14A459-VDA
4S7T-14489-VDA


DISCONNECT RADIO
CONNECTORS
(NON-SYNC ONLY)
VEHICLE
RADIO
DISCONNECT
LH
FRT
SPEAKER
RH
FRT
SPEAKER
4S7T-14A459-VDA
4S7T-14A459-VDA

N0150582

Section 2: Electrical

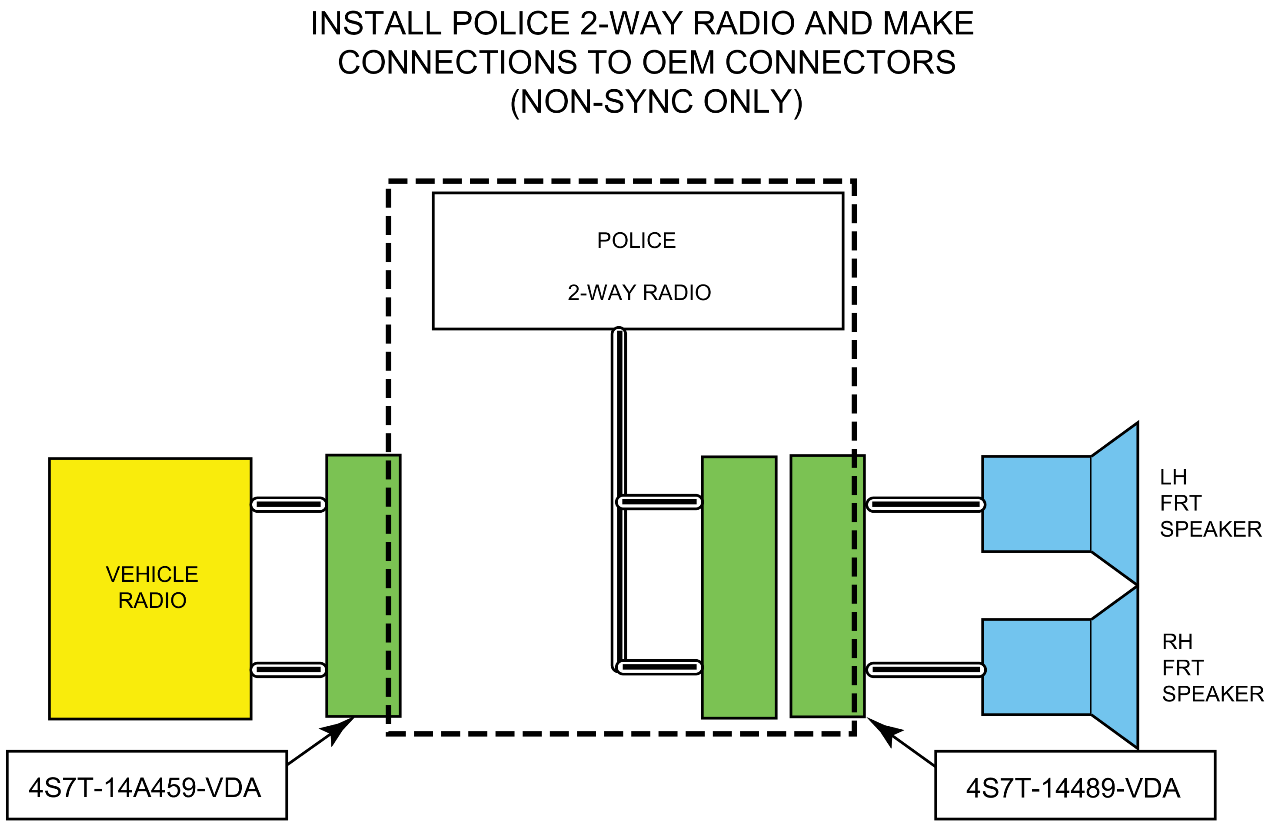
RADIO WIRING WITH SYNC


POLICE
2-WAY RADIO
USE
POLICE
AUXILIARY
RADIO
SPEAKER
VEHICLE
RADIO
LH
FRT
SPEAKER
RH
FRT
SPEAKER
4S7T-14A459-VDA
4S7T-14A459-VDA

Do not change OEM Vehicle Radio Wiring

N0150583

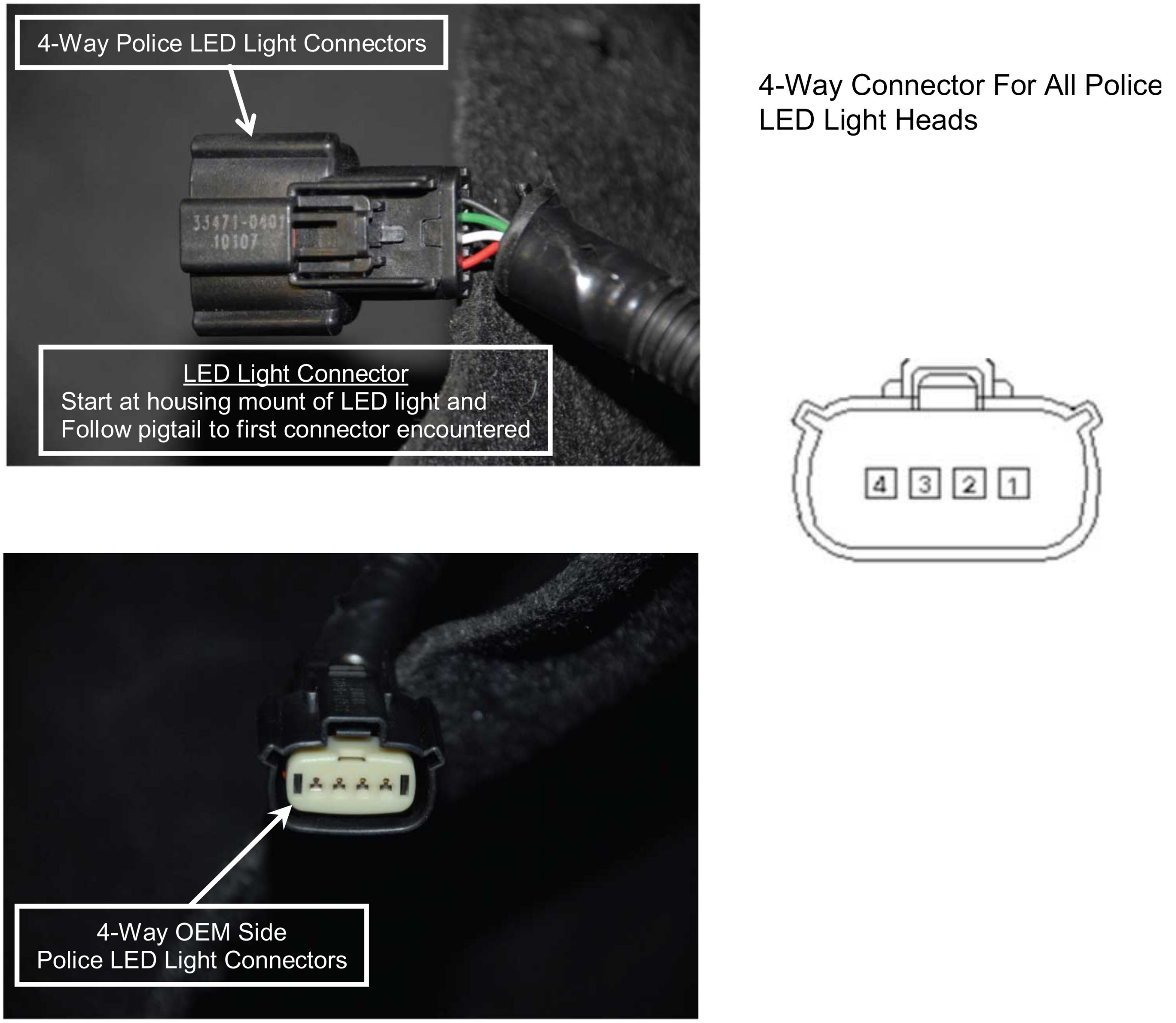
Section 2: Electrical


INSTALL POLICE 2-WAY RADIO AND MAKE
CONNECTIONS TO OEM CONNECTORS
(NON-SYNC ONLY)
POLICE
2-WAY RADIO
VEHICLE
RADIO
LH
FRT
SPEAKER
RH
FRT
SPEAKER
4S7T-14A459-VDA
4S7T-14489-VDA

N0150581

Section 2: Electrical

Utility – 4–Way Connector For All Police LED Light Heads


4-Way Police LED Light Connectors
33471-0401
10107
LED Light Connector
Start at housing mount of LED light and
Follow pigtail to first connector encountered
4-Way Connector For All Police LED Light Heads
4
3
2
1
4-Way OEM Side
Police LED Light Connectors

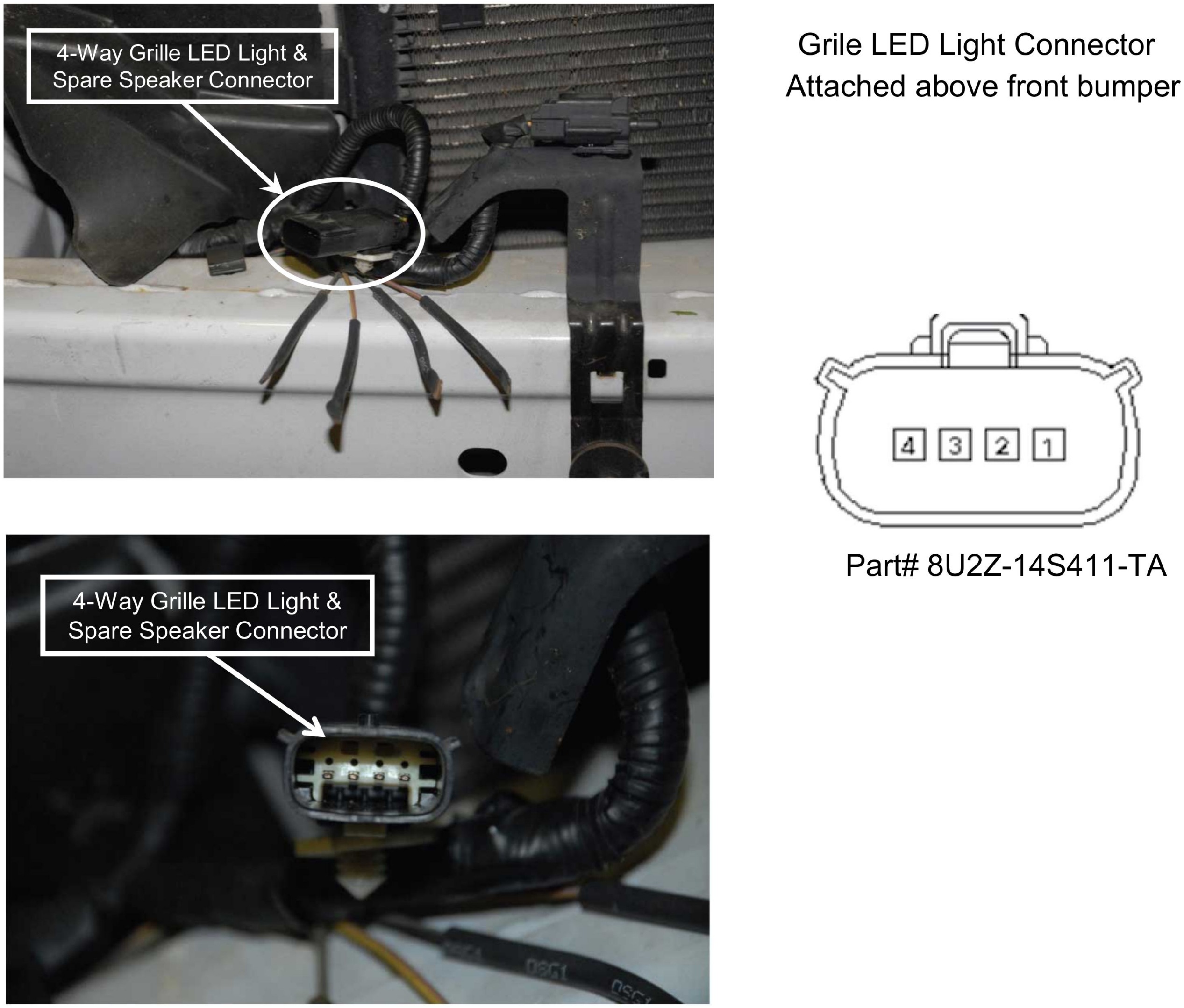
N0151525

Connector View For Connector 8U2Z-14S411–TA

Pin Number	Description
1	Control Power
2	LED Light Pattern
3	LED Light Sync
4	Ground

Section 2: Electrical

Grille LED Light Connector


4-Way Grille LED Light & Spare Speaker Connector
Grile LED Light Connector Attached above front bumper
4
3
2
1
Part# 8U2Z-14S411-TA
4-Way Grille LED Light & Spare Speaker Connector

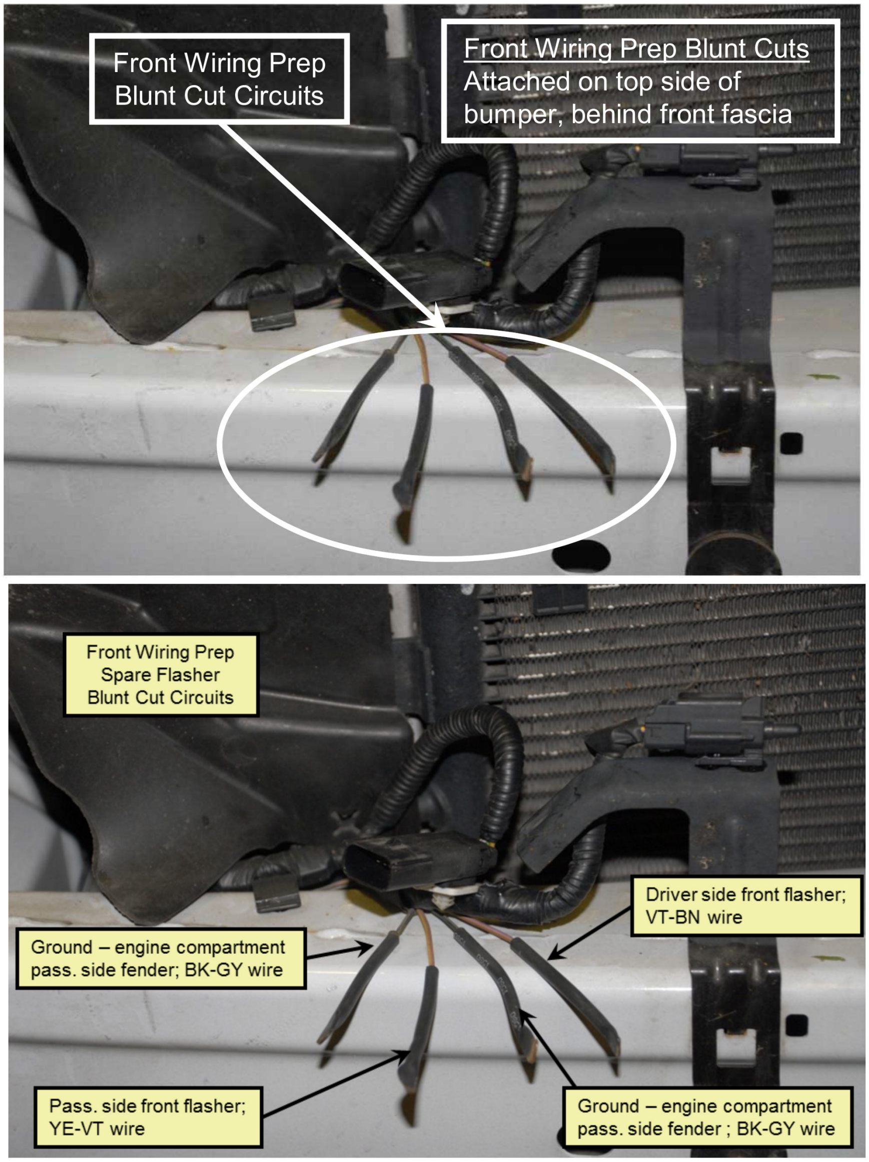
N0151479

Connector View For Connector 8U2Z-14S411–TA.

Pin Number	Description	Wire Color
1	Grille LED Light Ground	BN
2	Grille LED Light Pattern	GY-BN
3	Speaker (-)	GY-OG
4	Speaker (+) Spare	BK-GY

Section 2: Electrical

Utility — Front Wiring Prep Blunt Cut Circuits

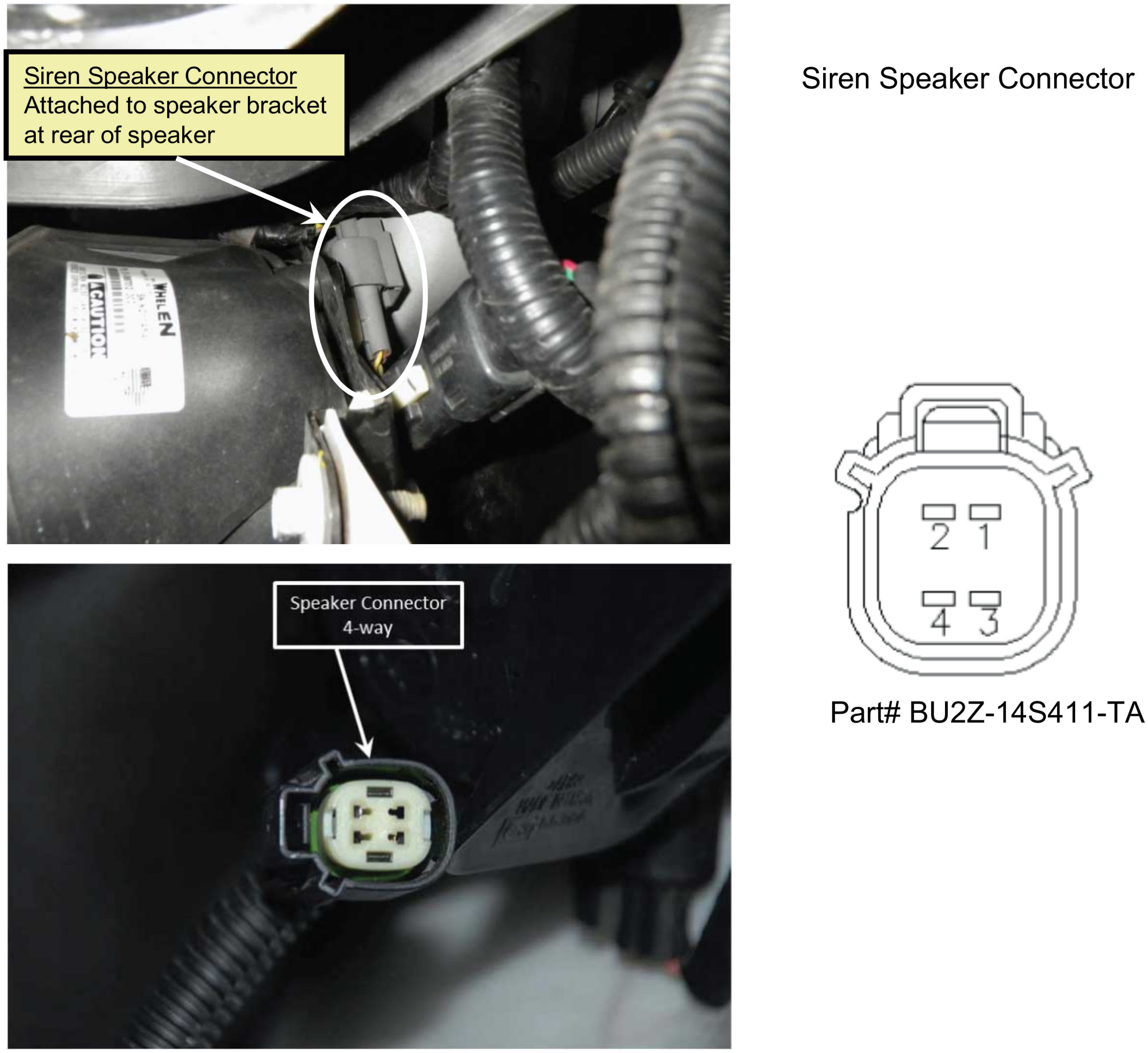

Front Wiring Prep Blunt Cut Circuits
Front Wiring Prep Blunt Cuts Attached on top side of bumper, behind front fascia
Front Wiring Prep Spare Flasher Blunt Cut Circuits
Driver side front flasher; VT-BN wire
Ground – engine compartment pass. side fender; BK-GY wire
Pass. side front flasher; YE-VT wire
Ground – engine compartment pass. side fender ; BK-GY wire

N0151480

Front Wiring Prep Blunt Cut Circuits Attached to Front Bumper

Section 2: Electrical

Utility — Siren Speaker


Siren Speaker Connector
Attached to speaker bracket at rear of speaker
Speaker Connector 4-way
Siren Speaker Connector
2
1
4
3
Part# BU2Z-14S411-TA

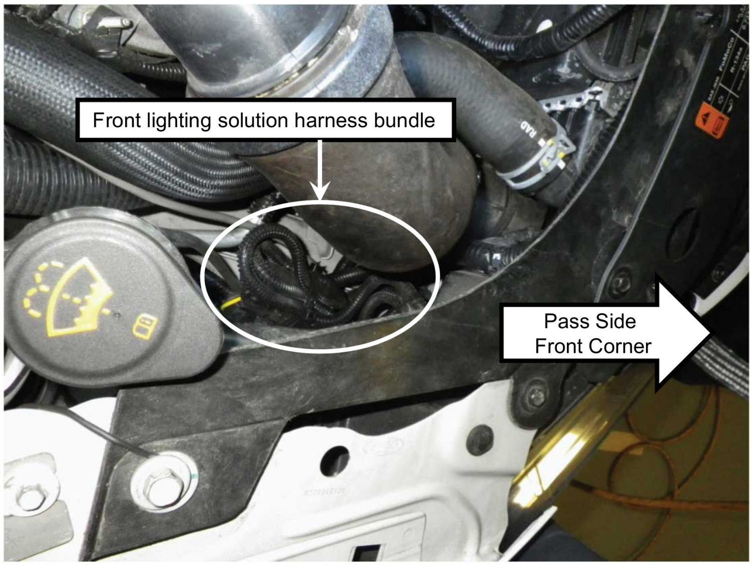
N0151481

Connector View For Connector BU2Z-14S411–TA.

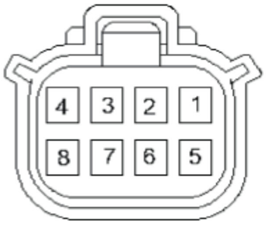
Pin Number	Description	Wire Color
1	Siren (+)	YE
2	Open	
3	Open	
4	Siren (-)	BU-WH

Section 2: Electrical

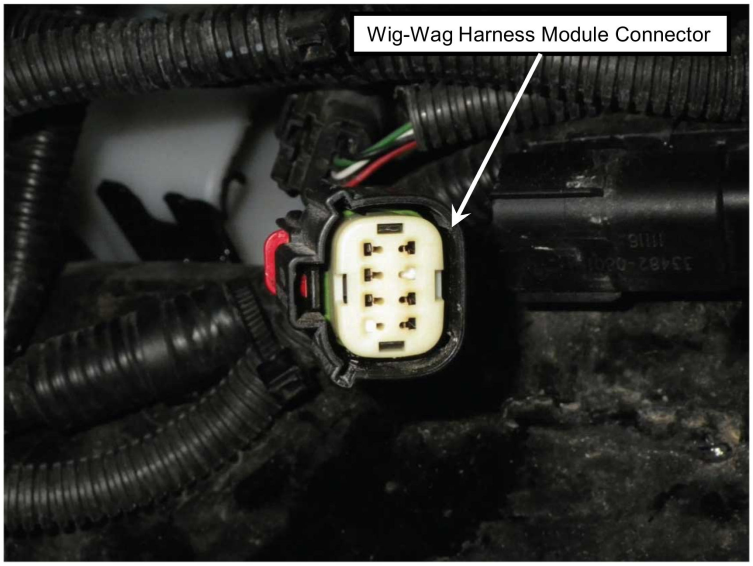
Utility — Front Lighting Solution Wig-Wag LED And Front Corner LED Lights Connector


Front lighting solution harness bundle
Pass Side Front Corner

Front Lighting Solution Wig-Wag LED And Front Corner LED Lights Connector



Part # CU2Z-14S411-ALA


Wig-Wag Harness Module Connector

N0151482

Connector View For Connector CU2Z-14S411–ALA Pin Out Continued On The Next Page.

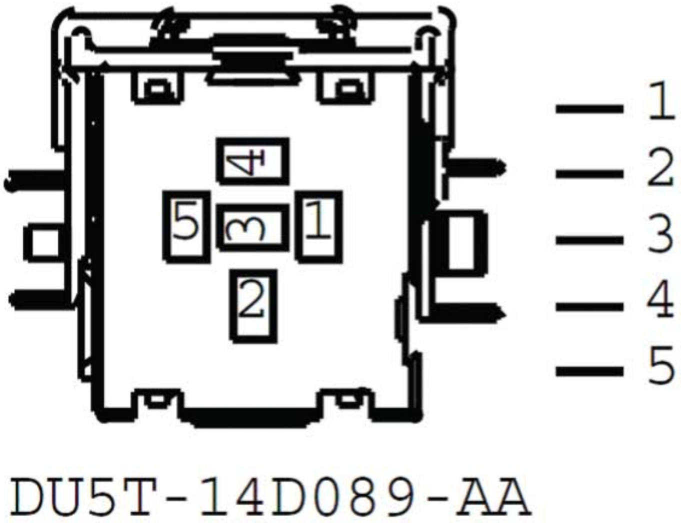
Pin Number	Description	Fuse	Wire Color
1	Wig-Wag Control		VT
2	Wig-Wag Passenger Side Pattern		GN-WH
3	Wig-Wag Driver Side Pattern		GY
4	Open		
5	Wig-Wag Run/Start (20A)	BJB #74	VT-BN

Section 2: Electrical

(Continued)

6	Front Corner LED Lights Control/ Power		
7	Front Corner LED Lights Pattern		GY-BN
8	Wig-Wag Ground		BK-GY

Utility — Flasher Relay



N0141078

Connector View For Connector DU5T-14D089–AA

Pin Number	Circuit Number	Signal Name/Function
1		Flasher Power
2		
3		
4		Right Side Flasher Blunt Cut
5		Left Side Flasher Blunt Cut

N0141079

Front flasher power is supplied through the second 14 way power connector and is available on the Sedan and Utility. The right and left blunt cuts are located in the front grille area.

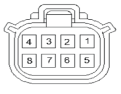
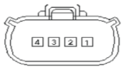
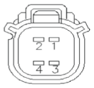
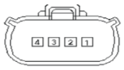
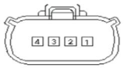
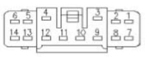
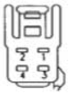
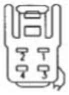
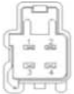
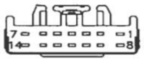
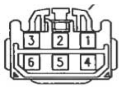
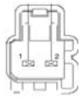
The rear flasher relay is used to turn modifier supplied decklid flashers on in the Sedan when the trunk is open.

NOTE:
Fuse sizes are given to help locate the fuse in the PDB. Ford recommends that current be limited to 85% of the value (40 Amp should be limited to 34 Amp).

Section 2: Electrical

Utility — Pigtail Information

2013MY SEDAN/UTILITY POLICE INTERCEPTOR PIGTAIL INFORMATION

CONNECTOR PICTURE	HARNESS	DEVICE	CONN. TYPE	PIN	FUNCTION	Service Pigtail #	INFO
	14290	POL FLASH	8-WAY	1 2 3 4 5 6 7 8	WW INPUT WW RH PTRN/PWR WW LH PTRN/PWR WW R/S STROBES PWR PATTERN WW GND	CU2Z-14S411-ALA	Must splice cavities 1 and 6 together if function is not being used. Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	LH WIG WAG RH WIG WAG	4-WAY	1 2 3 4	WW INPUT WW SCN LOCK WW SYNC WW GND	8U2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	SIREN SPEAKER	4-WAY	1 2 3 4	SIREN + (UNUSED) (UNUSED) SIREN -	BU2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	LH SIDE CORNER MARKER RH SIDE MARKER	4-WAY	1 2 3 4	Power Pattern Sync GND	8U2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14290	GRILLE & LOUD SPEAKER	4-WAY	1 2 3 4	TDM GRL GND TDM PATTERN LD SPKR - LD SPKR +	8U2Z-14S411-TA	Wire type- 3TBD-1.0mm Terminal- 7C3T-14474-DA
	14401	POLICE POWER & VEHICLE SIGNALS	14-WAY	1 2 3 4 5 6 7 8 9 10 11 12 13 14	WIGWAG LAMP CONTROL SIDE LAMP PWR CONTROL FRONT FLASHER PWR CONTROL LOUDSPEAKER NEG OPEN SIDE LAMP SYNC CONTROL DIMMER BRAKE OUTPUT LOUDSPEAKER PWR/TDM GRILL OPEN OPEN OPEN OPEN SIDE STROBE PATTERN	CU2Z-14S411-APA	0.64 CAVITIES- 2TAD-0.75mm 2.8 CAVITIES- 2TAD-1.0mm 0.64 CAVITIES- 1/2/5/6/7/8/13/14 TERMINAL 3F2T-14474-RA 2.8 CAVITIES- 3/4/9/10/11/12 TERMINAL 97BG-14474-BBA
	14401	SIREN	4-WAY	1 2 3 4	SIREN FEED/LEFT FRONT SPK + SIREN SHIELD/LEFT FRONT SPK - OPEN/RIGHT FRONT SPK + SIREN RETURN/RIGHT FRONT SPK -	3U2Z-14S411-LUB	WIRE TYPE- 2TAD-1.0mm TERMINAL 97BG-14474-ABB
	14401	2-WAY RADIO	4-WAY	1 2 3 4	LEFT FRONT SPK + LEFT FRONT SPK - RIGHT FRONT SPK + RIGHT FRONT SPK -	3U2Z-14S411-LUB	WIRE TYPE- 2TAD-1.0mm TERMINAL 97BG-14474-ABB
	14401	2-WAY RADIO	4-WAY	1 2 3 4	LEFT FRONT SPK + LEFT FRONT SPK - RIGHT FRONT SPK + RIGHT FRONT SPK -	3U2Z- 14S411-BUB	WIRE TYPE- 2TAD-1.0mm TERMINAL 97BG-14421-ABB
	14401	POLICE FEATURES & BRAKE OUTPUT	14-WAY	1 2 3 4 5 6 7 8 9 10 11 12 13 14	B+ FEED 17AMP CNTRL BUTTON 1 CNTRL BUTTON 2 CNTRL BUTTON 3 CNTRL BUTTON 4 POL_START POL_R/S #1 B+ FEED #2 17AMP VSS DEL ASSY B+ FEED #3 12AMP PARK DETECT DRV DOOR AJAR POL_R/S #2	3U2Z-14S411-BJAC	1.5 CAVITIES- 0.75mm 2.8 CAVITIES- 1.5mm 0.64 CAVITIES- 2/3/4/5/6/9/10/11/12/13 TERMINAL 97BG-14474-ABB 2.8 CAVITIES- 1/7/8/14 TERMINAL 97BG-14474-BCA WIRE TYPE- 2TAD
	14401	POLICE POWER	6-WAY	1 2 3 4 5 6	POLICE B+ 34AMP POLICE B+ 34AMP POLICE B+ 34AMP GROUND GROUND GROUND	3U2Z- 14S411-HEA	WIRE TYPE- 2TAD-4.0mm TERMINAL 97BG-14474-CCA
	14A227 (D258 ONLY)	POLICE INLINE	2-WAY	1 2	CHMSL LAMP DECKLID	3U2Z- 14S411-LAB	WIRE TYPE- 2TAD-0.50mm TERMINAL 97BG-14421-AAB

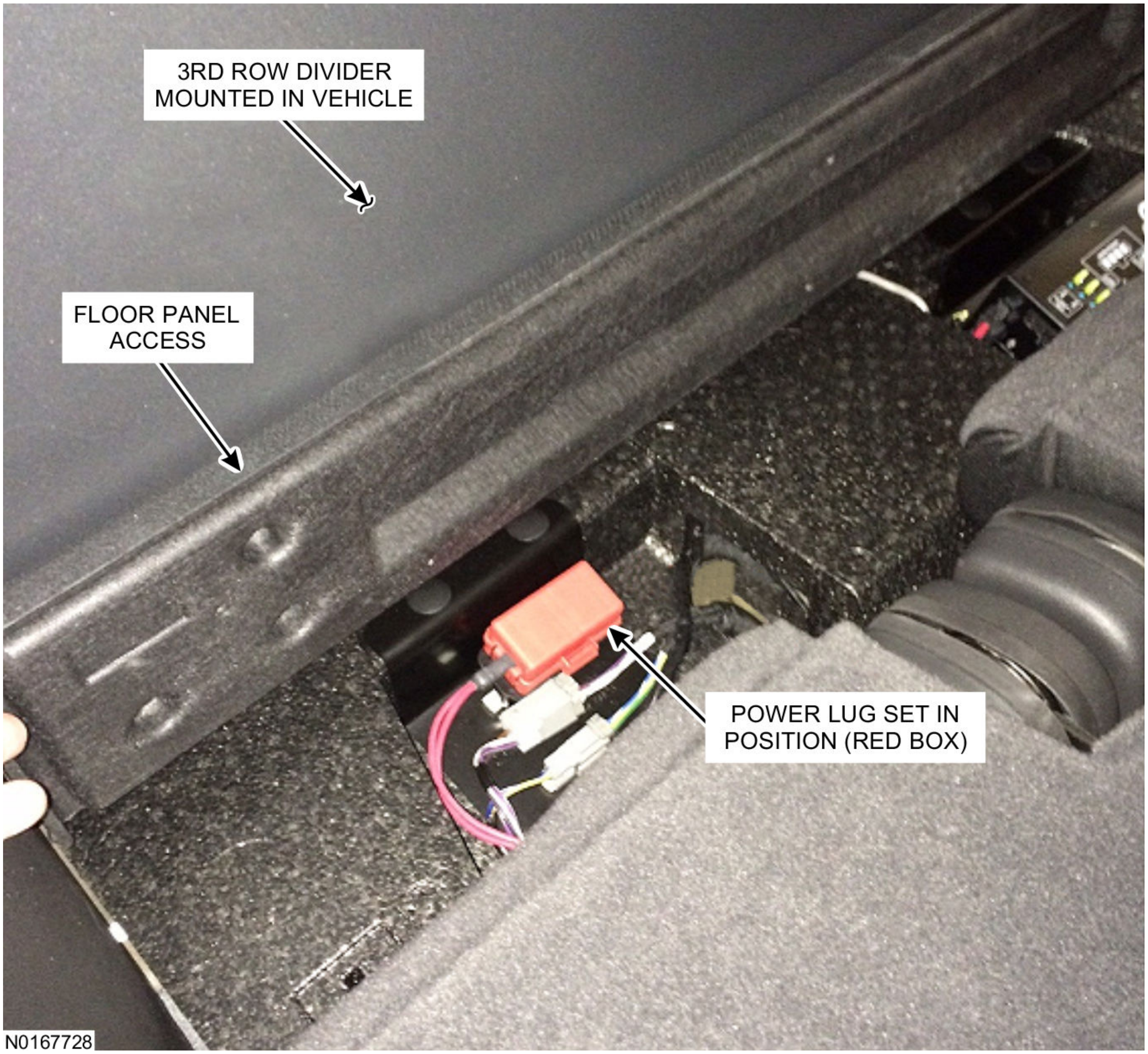
N0150616

Section 2: Electrical

Utility — NEW Rear Power Access Location — late model year availability

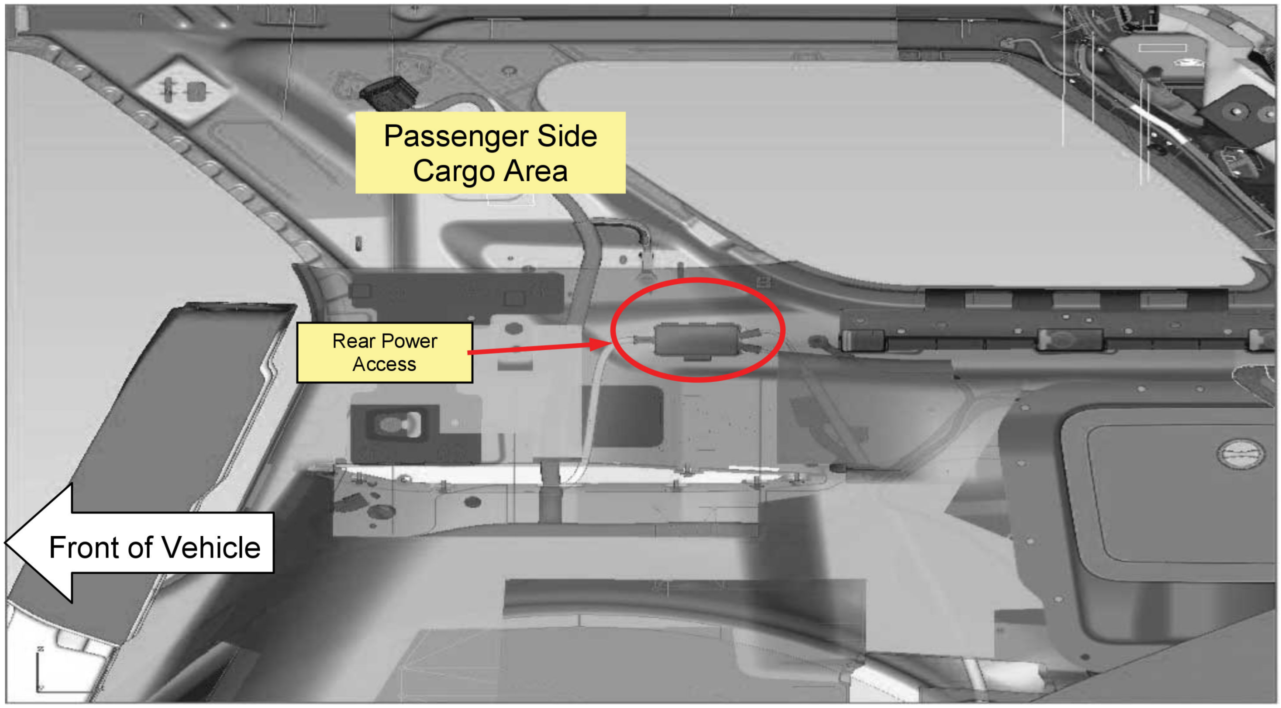
New location for the Utility rear power access for vehicles built late in the model year (late 2015)

Rear power access for these vehicles can be found beneath an access panel between the second row seat and load floor.


3RD ROW DIVIDER MOUNTED IN VEHICLE
FLOOR PANEL ACCESS
POWER LUG SET IN POSITION (RED BOX)
N0167728

Section 2: Electrical

Utility — Rear Power Access



N0141051

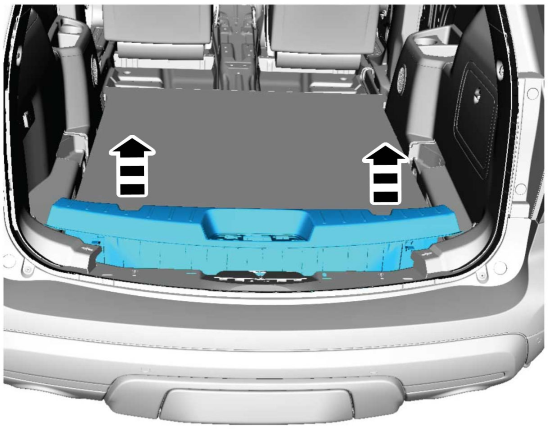
Utility — Remove cargo area passenger side trim panel:

1. Position aside the liftgate weatherstrip.

NOTICE:
To avoid damage to the liftgate scuff plate trim panel, remove any retaining clips from the body and attach them to the liftgate scuff plate trim panel before installing.

2. Pull upward to release the retaining clips.
3. If equipped, disconnect the rear passive start antenna electrical connector and remove the liftgate scuff plate trim panel.

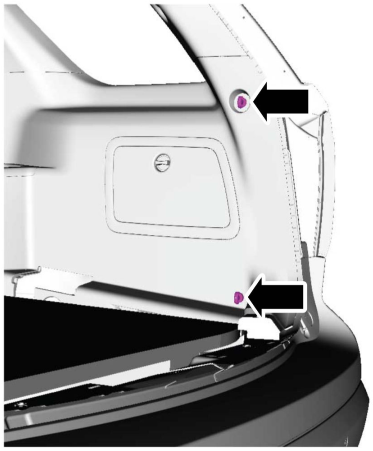
Section 2: Electrical



N0145094

NOTICE:
To avoid damage to the scuff plate trim panel, remove any retaining clips from the body and attach them to the scuff plate trim panel before installing.

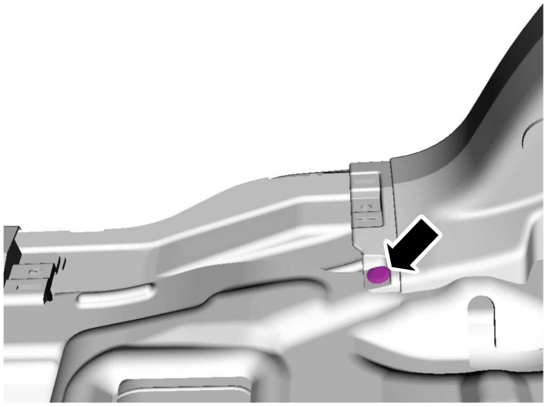
4. Remove the rear door scuff plate trim panel.
5. Remove the quarter trim panel push pin retainer.



N0145096

6. Position the second row seat in the flat position and then tilt the second row seat forward.
7. Position the third row seat in the flat position if equipped.
8. Remove the 2 quarter trim panel tie down hooks.

Section 2: Electrical



N0145095

9. Remove the third row safety belt anchor bolt cover on the quarter trim panel.
10. Remove the third row safety belt anchor bolt.

- To install, tighten to 40 Nm (30 lb-ft).

NOTICE:
To avoid damage to the quarter trim panel, remove any retaining clips from the body and attach them to the quarter trim panel before installing.

11. Pull the quarter trim panel toward the inside of the vehicle to release the quarter trim panel clips and disconnect electrical connectors and remove the quarter trim panel.

Installation

12. To install, reverse the removal procedure.

Utility — My Fleet Management

Allows configuration of following functions using an Integrated Diagnostic System (IDS) service tool

- Ability to set vehicle maximum speed from 90 MPH to the factory maximum speed setting.
- Ability to set maximum radio volume from 0% to 100%.

Utility — Courtesy Lamp Disable (Dark Mode)

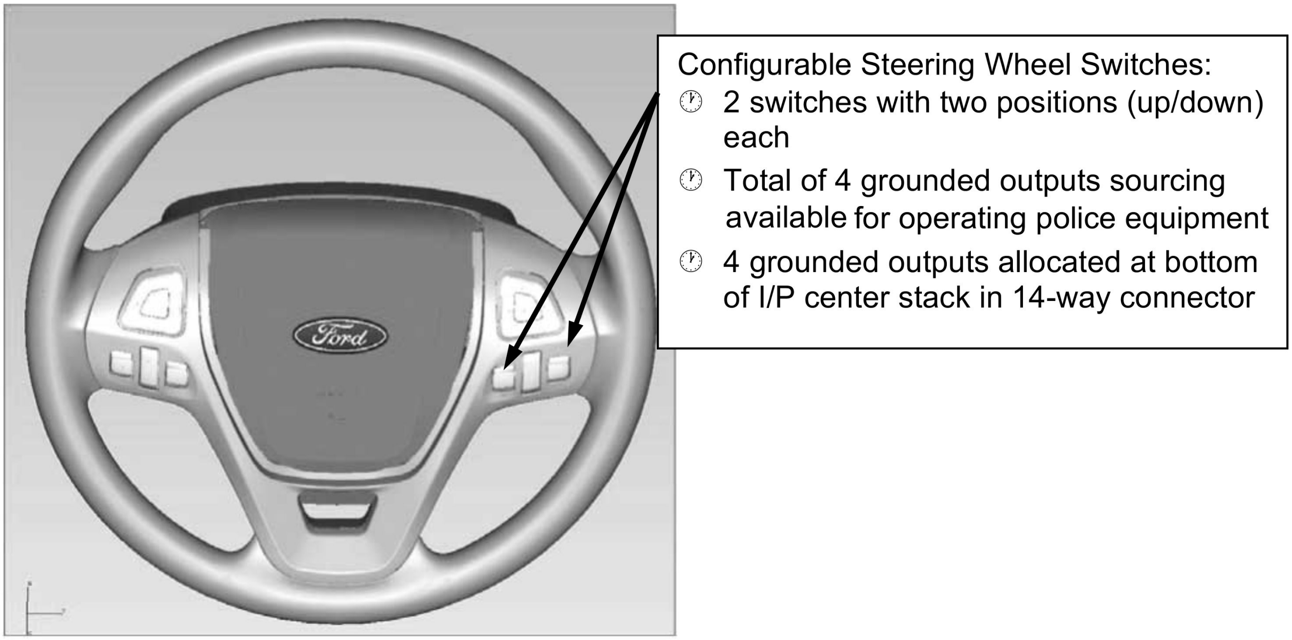
This option offers deletion of the illuminated entry function. Upon vehicle power-up, the Smart Junction Box (SJB) will not provide interior lighting during entry or exit of the vehicle. The interior lighting will, however, still operate on demand whenever the dome lamp switch is active. If the dark car feature is necessary, the assembly plant enables this feature through the SJB. The vehicle can be configured by entering diagnostics, enabling/disabling the courtesy lamps and then exiting diagnostics.

Use the following steps to enable or disable the courtesy lamps:

1. Connect the IDS (at the latest calibration) to the vehicle via the DLC.
2. Allow the IDS to ID the vehicle. Select the Tool Box.
3. Select Module Programming, Programmable Parameters, Interior Lighting, then the TIC.
4. A screen will come up to remind you to turn the ignition on.
5. Select Dark Enable and the TIC.
6. During configuration the lights will flash and the system changes from Disabled to Enabled.
7. Final Screen: Module configuration complete, check/clear any DTCs that may have been set.

Section 2: Electrical

Utility — Steering Wheel Switches



Configurable Steering Wheel Switches:

- 2 switches with two positions (up/down) each
- Total of 4 grounded outputs sourcing available for operating police equipment
- 4 grounded outputs allocated at bottom of I/P center stack in 14-way connector

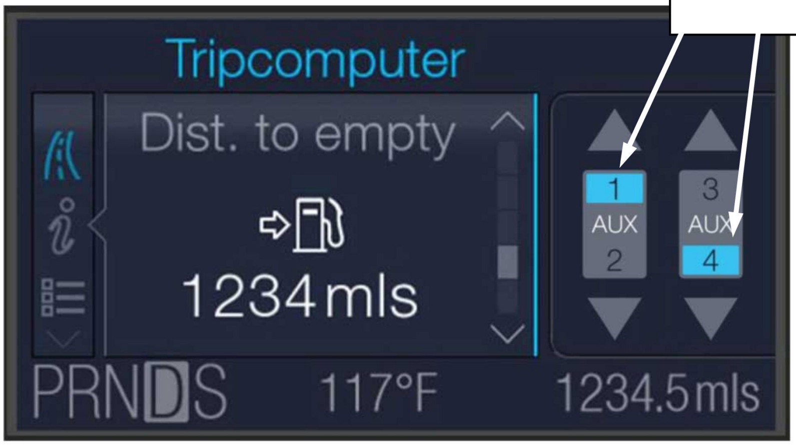
N0141056

Steering Wheel Operation

- Two switches are available for configuration as indicated above.
- Each switch has 2 positions (up/down).
- Four total ground side switching outputs are available in 14-way connector located behind the close out panel at the bottom of the Electronic Finish Panel (EFP).
- Any combination or all of the four outputs can be turned on simultaneously.
- To activate a switch/output, push the desired switch in the direction of the label either above or below the switch.
- To deactivate that function, push the desired switch in the same direction as was used when activating the output.
- Cluster display will illuminate the switch/position while activated.

Section 2: Electrical

Utility — Steering Wheel Switch Cluster Display



Cluster display indicating that positions 1 and 4 are activated

N0141057

Fuse Information

If electrical components in the vehicle are not working, a fuse may have blown. Blown fuses are identified by a broken wire within the fuse. Check the appropriate fuses before replacing any electrical components.

NOTE:
Always replace a fuse with one that has the specified amperage rating. Using a fuse with a higher amperage rating can cause severe wire damage and could start a fire.

Electrical Component Resource

See part numbers and supplier in the chart below to obtain terminals and connectors.

Section 2: Electrical

POLICE INTERCEPTOR CONNECTOR FORD TO SUPPLIER PART NUMBER CROSS REFERENCE MATRIX

COMPONENT IN VEHICLE LOCATION	FORD COMPONENT CONNECTOR PART NUMBER	SUPPLIER	SUPPLIER PART NUMBER	UPFIT HARNESS SIDE PART NUMBER	SUPPLIER PART NUMBER
ION Grill LEDs @ Behind Grille Light Heads (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
ION Rear CHMSL LEDs @ Light Heads (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
ION Rear Decklid/Liftgate LEDs @ Light Heads (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
VERTEX Front Corner LEDs @ Headlight Modules (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
VERTEX Rear Corner LEDs @ Rear Taillights (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
PARK/TURN/WARN LEDs @ Headlight Modules (4 Pin)	4F9T-14A464-HA (000)	MOLEX	33471-0401	4F9T-14A624-KA (000)	33481-0401
PARK/TURN/WARN LEDs @ Headlight Module (3 Pin)	7T4T-14A464-BA (000)	MOLEX	33471-0301	7T4T-14A624-AA (000)	33481-0301
Siren Speaker @ Driver Side Behind Fascia(2X2 Pin)	5W7T-14A464-CA (004)	MOLEX	33472-4416	5W7T-14A624-BA (002)	33482-0416
WARN CONTROL MODULE @ Underhood near Coolant Bottle (4X2 Pin)	5W7T-14A464-GA (000)	MOLEX	33472-0801	5W7T-14A624-DA (000)	33482-0801
Relay Center & CENCOM (5X2 Pin)	4S7T-14489-VJA	YAZAKI	7283-6455-40	4S7T-14A459-VJA	7282-6455-40
At CENCOM (2X2 Pin)	4S7T-14489-VDA	YAZAKI	7283-6449-40	4S7T-14A459-VDA	7282-6449-40
At Cooling Fan (2 Pin)	4S7T-14489-VAA	YAZAKI	7283-6443-40	4S7T-14A459-VAA	7282-6443-40
Siren Speaker @ Instrument Panel/Center Stack (2x2 Pin)	4S7T-14A459-VDA	SUMITOMO		4S7T-14489-VDA	
Power/Vehicle Signals @ Instrument Panel/Center Stack (2x7 Pin)	4S7T-14459-YRA	SUMITOMO		4S7T-14489-YRA	
Police Lights@ Instrument Panel Center Stack (2x7 Pin)	BU5T-14A459-BA	SUMITOMO		4L3T-14489-AC	
Police Radio Connector @ Instrument Panel/Center Stack (2x2 Pin)	4S7T-14489-VDA	SUMITOMO		4S7T-14A459-VDA	
40A Auxiliary Power @ Instrument Panel/Center Stack (3x3 Pin)	BU5T-14A459-AA	YAZAKI		4S7T-14489-YMA	
WIRE GAUGE or Part Number	COMPONENT TERMINAL PART NUMBER	SUPPLIER	SUPPLIER PART NUMBER	HARNESS TERMINAL PART NUMBER	SUPPLIER PART NUMBER
Based on wire size					
14 , 16	33012-2001	MOLEX	33012-2001	33000-0001	33000-0001
18 , 20	33012-2002	MOLEX	33012-2002	33000-0002	33000-0002
22	33012-2003	MOLEX	33012-2003	33000-0003	33000-0003
Based on wire size					
16 , 18	7116-4101-02	YAZAKI	7116-4101-02	7114-4101-02	7114-4101-02
20 , 22	7116-4100-02	YAZAKI	7116-4100-02	7114-4100-02	7114-4100-02
4S7T-14459-YRA / 4S7T-14489-YRA	Terminals for Pins: 1,7,8 97BG-14474-BCA 2,3,4,5,6 97BG-14474-AAB	SUMITOMO			
BU5T-14A459-BA / 4L3T-14489-AC	Terminals for Pins: 1,2,7 3F2T-14474-RA 6,14 3F2T-14474-SA 9 97BG-14474-BBA	SUMITOMO			
4S7T-14489-VDA / 4S7T-14A459-VDA	2TAD-0.75 1.5MM FLAT				
For 40A Auxiliary Power Connector	97BG-14421-CCA	YAZAKI			

N0146595

Electrical Component Resource

Mating connectors, terminals and subcomponent availability are managed for Ford Fleet and Pool Accounts through Ford Component Sales. Ford Component Sales, LLC (FCS) uses Globe Component Products or Dynamic Supply Solutions (DSS) to process and coordinate all Fleet and Pool Purchase Orders. By using Globe or DSS, FCS is able to offer the Fleet and Pool community reasonable minimum order quantities while still having the benefit of Ford Production pricing benefits.

Section 2: Electrical

Utility — Wiring Reference Information

Police Interceptor Sedan and Utility Wiring Diagram Excerpts

The following pages are from sections of both the Police Interceptor Sedan and Utility Wiring Diagrams.

Publication Ordering Information

To obtain information about ordering complete copies of Ford or Lincoln/Mercury publications, call 1-800-782-4356 or at www.helminc.com.

Available publications include Workshop Manuals, Wiring Diagrams, PC/ED Manuals and Owner Guides.

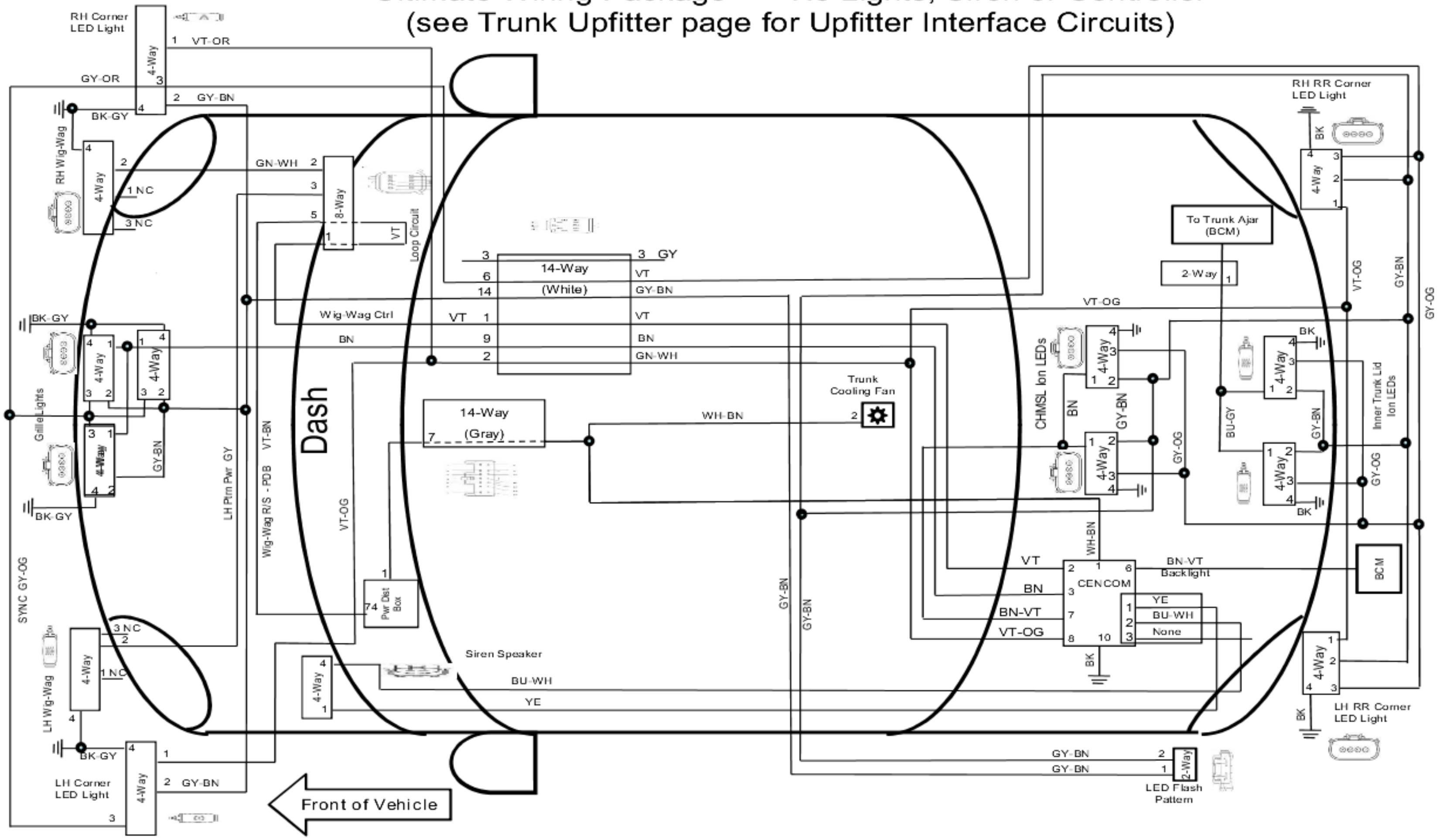
NEW Sedan — Wiring Diagrams: Police Interceptor

Sedan Wiring Package Options

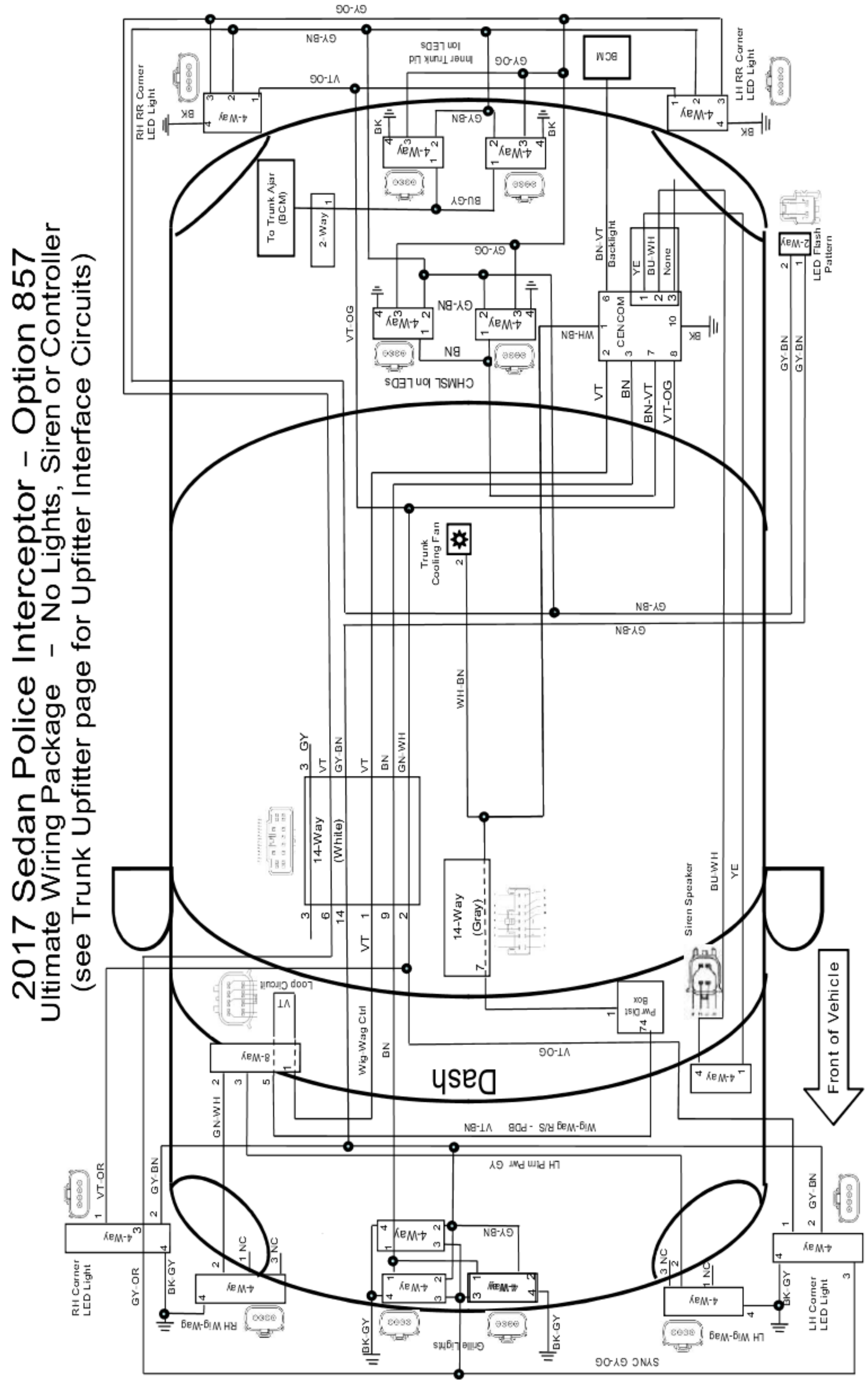
2017 Sedan Police Interceptor – Option 857 Ultimate Wiring Package - No Lights, Siren or Controller (see trunk uppfitter page for upfitter interface circuits)

Section 2: Electrical

2017 Sedan Police Interceptor – Option 857
Ultimate Wiring Package – No Lights, Siren or Controller
(see Trunk Upfitter page for Upfitter Interface Circuits)

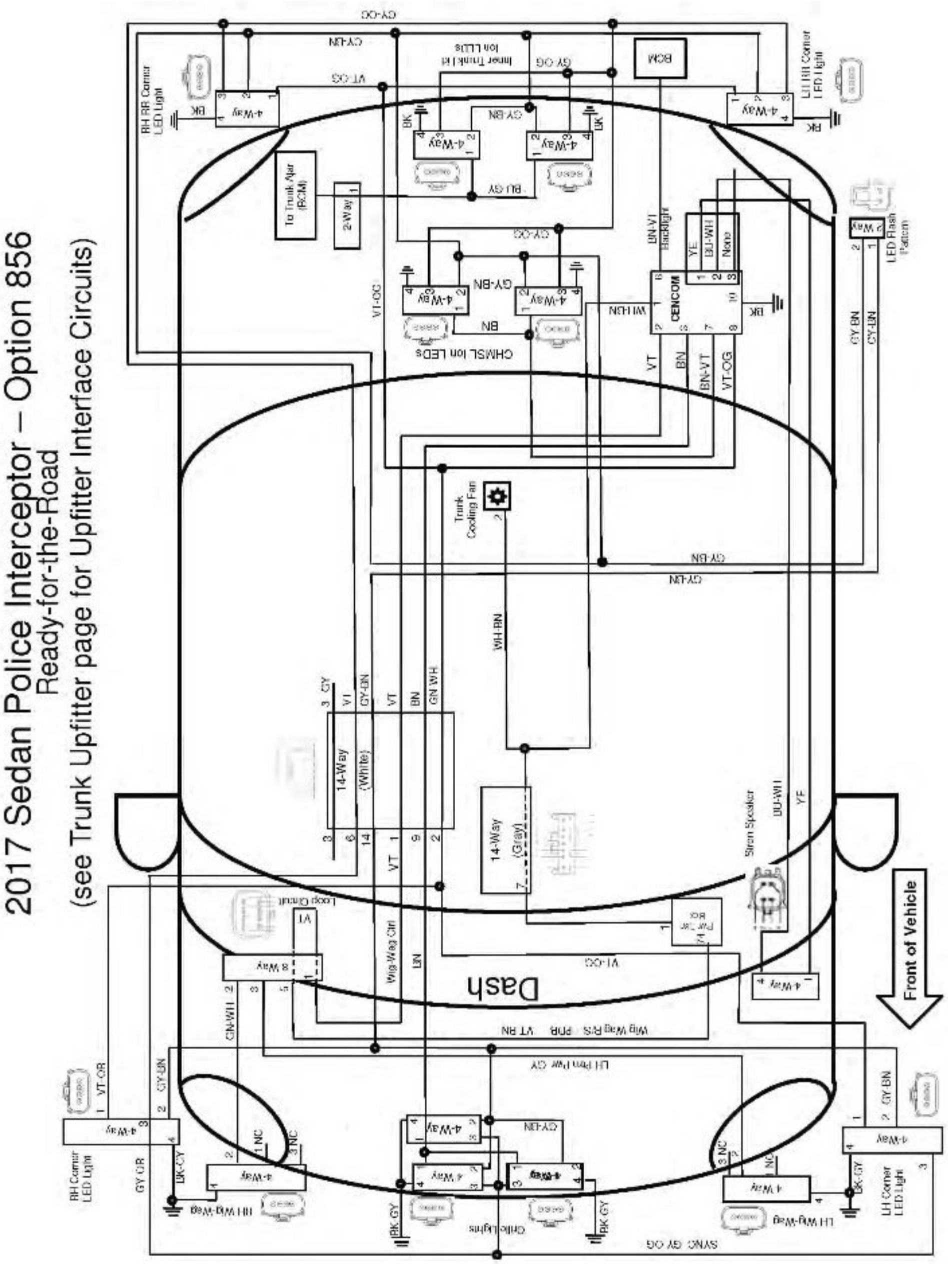

RH Corner LED Light
4-Way
1 VT-OR
GY-OR
3
2 GY-BN
4 BK-GY
RH Wig-Wag
4-Way
4
2
1 NC
3 NC
GN-WH
8-Way
2
3
5
1
VT
Loop Circuit
14-Way (White)
3
6
14
1
9
2
3 GY
VT
GY-BN
VT
BN
GN-WH
Wig-Wag Ctrl
BN
BK-GY
Grille Lights
4-Way
GY-BN
LH Ptrn Pwr GY
Wig-Wag R/S - PDB VT-BN
Dash
VT-OG
14-Way (Gray)
7
Pwr Dist Box
1
74
WH-BN
Trunk Cooling Fan
2
SYNC GY-OG
LH Wig-Wag
1 NC
LH Corner LED Light
Siren Speaker
BU-WH
YE
Front of Vehicle
GY-BN
GY-BN
LED Flash Pattern
2-Way
CHMSL Ion LEDs
BN
GY-BN
GY-OG
VT-OG
CENCOM
VT
BN
BN-VT
VT-OG
BN-VT Backlight
BK
None
BCM
To Trunk Ajar (BCM)
2-Way
BU-GY
Inner Trunk Lid Ion LEDs
RH RR Corner LED Light
LH RR Corner LED Light
GY-OG
GY-BN
VT-OG
BK

Section 2: Electrical


2017 Sedan Police Interceptor – Option 857
Ultimate Wiring Package – No Lights, Siren or Controller
(see Trunk Upfitter page for Upfitter Interface Circuits)
GY-OG
GY-BN
VT-OG
BCM
Inner Trunk Lid Ion LEDs
RH RR Corner LED Light
LH RR Corner LED Light
4-Way
BK
To Trunk Ajar (BCM)
2-Way
BU-GY
GY-OG
BN-VT Backlight
YE
BU-WH
None
CENCOM
WH-BN
VT-OG
GY-BN
BN
CHMSL Ion LEDs
VT
BN-VT
2-Way
LED Flash Pattern
Trunk Cooling Fan
WH-BN
14-Way (White)
GY
GN-WH
14-Way (Gray)
Siren Speaker
Pwr Dist Box
Loop Circuit
8-Way
Wig-Wag Ctrl
Dash
Front of Vehicle
Wig-Wag R/S - PDB VT-BN
LH Prim Pwr GY
VT-OR
GY-OR
BK-GY
RH Corner LED Light
RH Wig-Wag
Grille Lights
LH Wig-Wag
LH Corner LED Light
SYNC GY-OG
NC

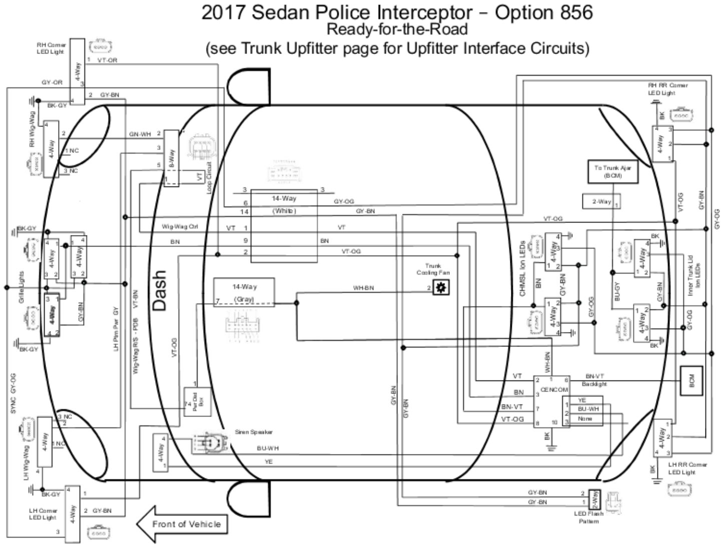
N0177564

Section 2: Electrical


2017 Sedan Police Interceptor – Option 856
Ready-for-the-Road
(see Trunk Upfitter page for Upfitter Interface Circuits)
RH RR Corner LED Light
LH RR Corner LED Light
4-Way
BCM
GY-OG
GY-BN
VT-OG
Inner Trunk Lid Ion LEDs
BK
BU-GY
To Trunk Ajar (BCM)
2-Way
CHMSL Ion LEDs
CENCOM
BN-VT Backlight
YE
BU-WH
None
WH-BN
BN
VT
BN-VT
VT-OG
LED Flash Pattern
Trunk Cooling Fan
14-Way (White)
14-Way (Gray)
GY
GN-WH
Siren Speaker
Pwr Ctrl Rly
Loop Circuit
8 Way
Wig-Wag Ctrl
Dash
Front of Vehicle
Wig Wag R/S PDB VT RN
LH Pem Pwr GY
RH Corner LED Light
LH Corner LED Light
RH Wig-Wag
LH Wig-Wag
Grille Lights
BK-GY
SYNC GY OG
VT-OR
GY-OR
NC

N0177554

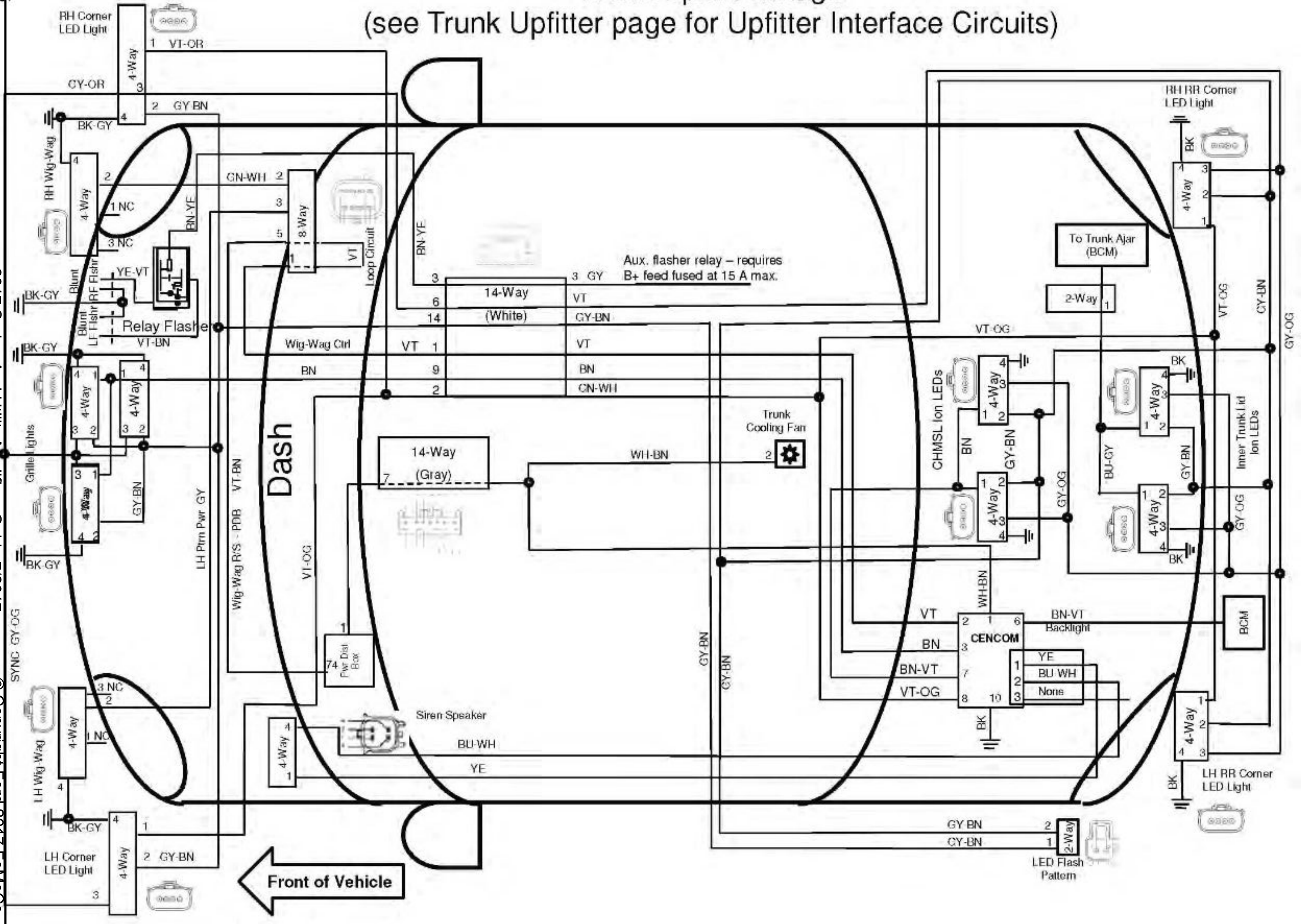
Section 2: Electrical


2017 Sedan Police Interceptor - Option 856
Ready-for-the-Road
(see Trunk Upfitter page for Upfitter Interface Circuits)
RH Corner LED Light
RH Wig-Wag
Grille Lights
LH Wig-Wag
LH Corner LED Light
Dash
14-Way
(White)
14-Way
(Gray)
Wig-Wag Ctrl
Trunk Cooling Fan
Siren Speaker
CENCOM
BN-VT Backlight
BCM
To Trunk Ajar (BCM)
2-Way
CHMSL Ion LEDs
Inner Trunk Lid Ion LEDs
RH RR Corner LED Light
LH RR Corner LED Light
LED Flash Pattern
Front of Vehicle
4-Way
8-Way
GY-BN
VT-OG
BN
VT
WH-BN
BU-WH
YE
BK-GY
GN-WH
GY-OG
BK

N0175169

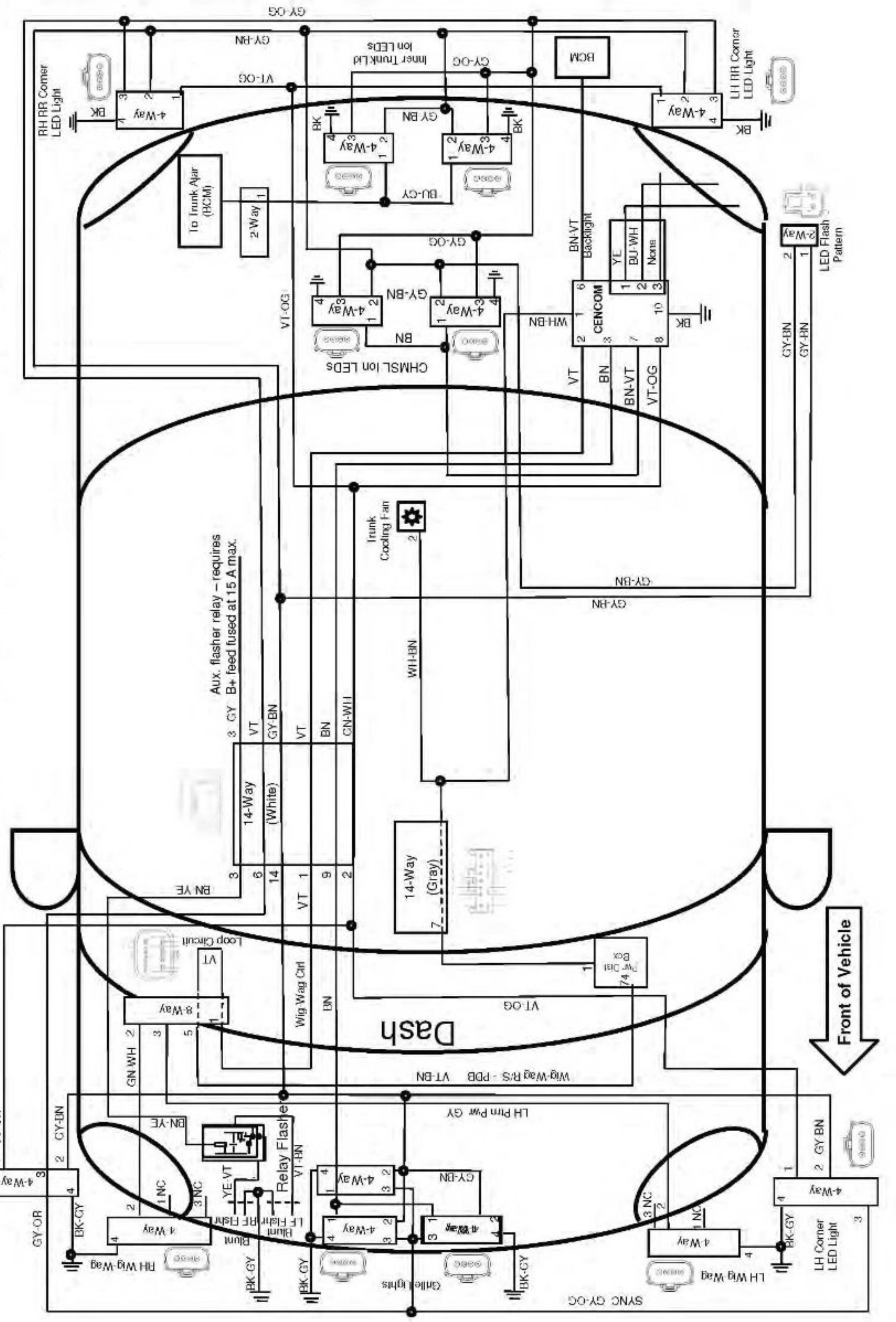
Section 2: Electrical

2017 Sedan Police Interceptor – Option 854
Trunk Upfit Package
(see Trunk Upfitter page for Upfitter Interface Circuits)


RH Corner LED Light
4-Way
1 VT-OR
2 GY BN
3
4
CY-OR
BK-GY
RH Wig-Wag
4-Way
1 NC
3 NC
CN-WH
8 Way
BN-YE
YE-VT
Blunt
RF Flshr
LF Flshr
Relay Flasher
VT-BN
Wig-Wag Ctrl
VT
BN
Loop Circuit
14-Way
(White)
3 GY
VT
GY-BN
CN-WH
Aux. flasher relay – requires B+ feed fused at 15 A max.
Grille Lights
BK-GY
Dash
LH Prm Pwr GY
Wig-Wag R/S - PDB
VT-OG
14-Way
(Gray)
WH-BN
Trunk Cooling Fan
Pwr Dist Box
74
Siren Speaker
BU-WH
YE
SYNC GY-OG
LH Wig-Wag
LH Corner LED Light
Front of Vehicle
GY-BN
CY-BN
2-Way
LED Flash Pattern
CENCOM
BN-VT
Backlight
VT-OG
None
BU WH
BK
BCM
LH RR Corner LED Light
CHMSL Ion LEDs
GY-OG
BU-GY
Inner Trunk Lid Ion LEDs
To Trunk Ajar (BCM)
RH RR Corner LED Light

N0177555

Section 2: Electrical



2017 Sedan Police Interceptor – Option 855

Light Controller Package

(see Trunk Upfitter page for Upfitter Interface Circuits)

GY-OG
GY-RN
VT-OG
GY-OG
Inner Trunk Lid
Ion LEDs
BCM
RH RR Corner
LED Light
LH RR Corner
LED Light
4-Way
BK
GY BN
To Trunk Ajar
(BCM)
2-Way
BU-GY
GY-OG
BN-VT
Backlight
YE
BU-WH
None
CENCOM
WH-BN
GY-BN
BN
CHMSL Ion LEDs
VT
BN-VT
VT-OG
LED Flash
Pattern
2-Way
GY-BN
GY-RN
Trunk
Cooling Fan
Aux. flasher relay – requires
B+ feed fused at 15 A max.
GY
GY-BN
VT
BN
GN-WH
14-Way
(White)
WH-BN
BN YE
14-Way
(Gray)
Pwr Dist
Box
74
Loop Circuit
8-Way
Wig-Wag Ctrl
VT-OG
Dash
Front of Vehicle
GN WH
Wig-Wag R/S - PDB VT-BN
LH Prm Pwr GY
BN-YE
Relay Flasher
VT-BN
YE-VT
RF Flash
LF Flash
Blunt
NC
VT-OR
CY-BN
RH Corner
LED Light
GY-OR
BK-GY
RH Wig-Wag
Grille lights
GY-BN
LH Wig-Wag
LH Corner
LED Light
GY BN
SYNC GY-OG

N0177556

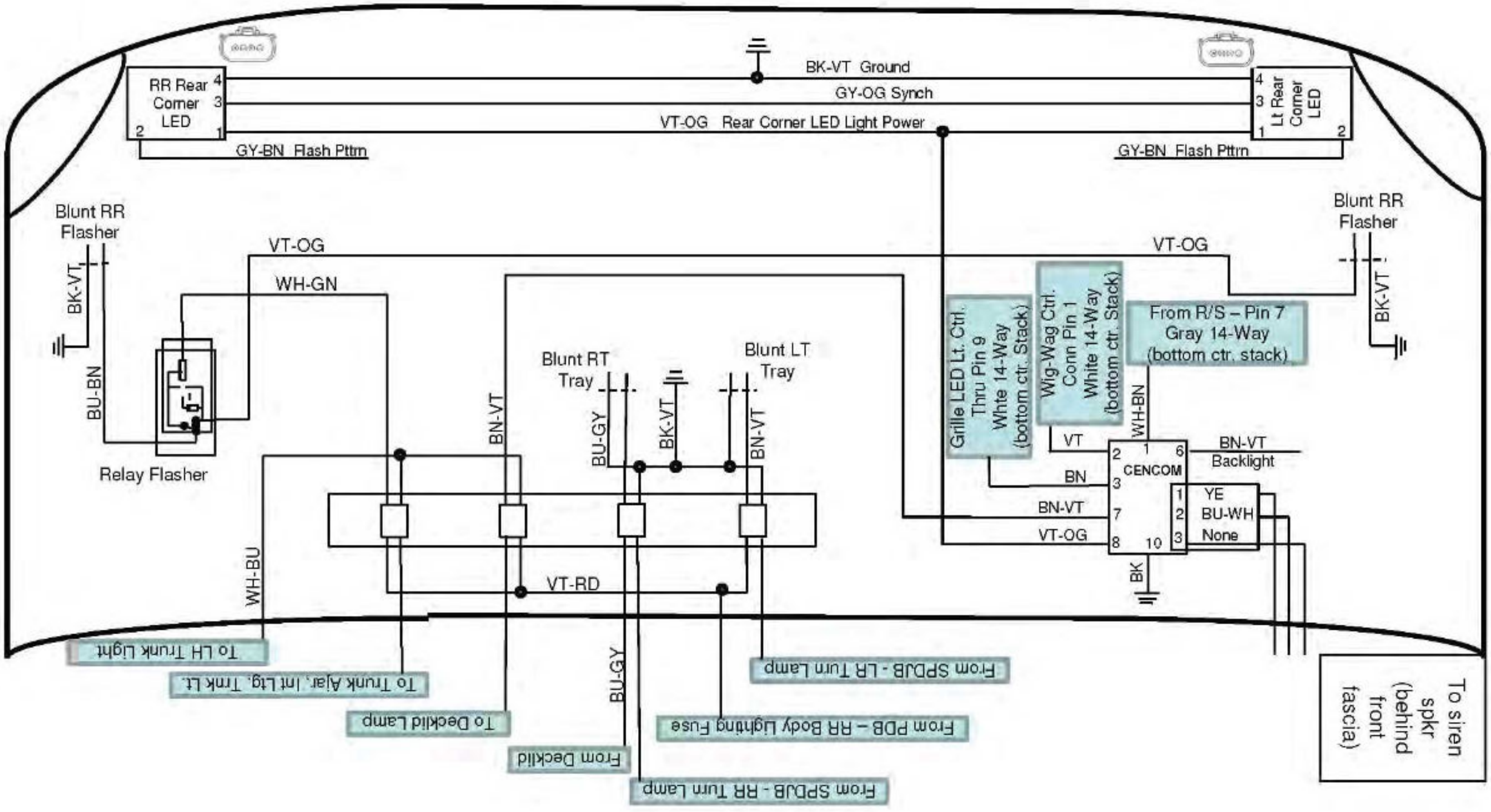
Section 2: Electrical

2017 Sedan Police Interceptor

With Option 856, 855 & 854

Upfitter Interface Circuits

Trunk – Rear of Vehicle

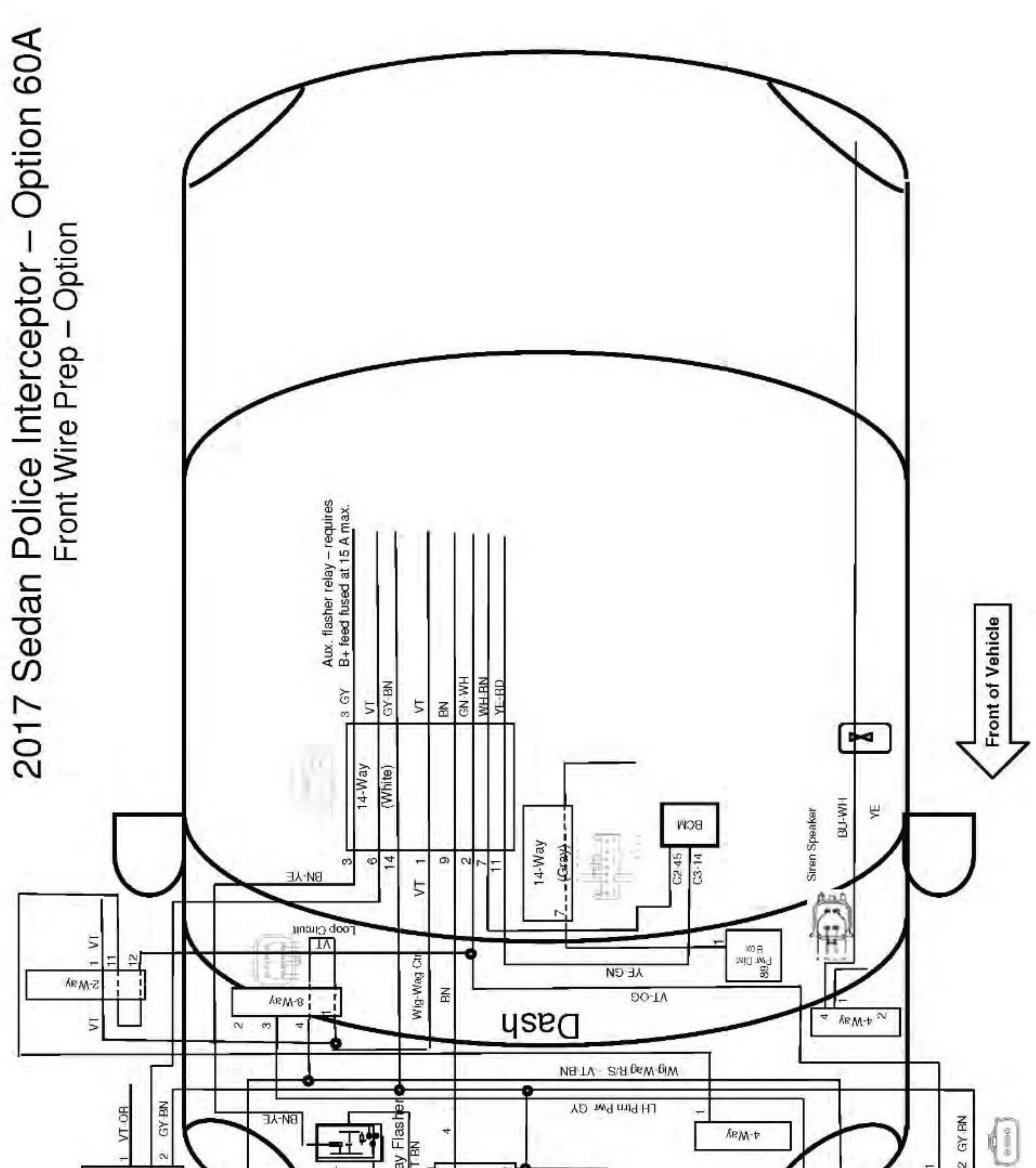

RR Rear Corner LED
4
3
1
2
BK-VT Ground
GY-OG Synch
VT-OG Rear Corner LED Light Power
GY-BN Flash Pttrn
Lt Rear Corner LED
4
3
1
2
GY-BN Flash Pttrn
Blunt RR Flasher
BK-VT
BU-BN
Relay Flasher
VT-OG
WH-GN
WH-BU
BN-VT
Blunt RT Tray
BU-GY
BK-VT
Blunt LT Tray
BN-VT
VT-RD
Blunt RR Flasher
VT-OG
BK-VT
Grille LED Lt. Ctrl. Thru Pin 9 Whte 14-Way (bottom ctr. Stack)
Wig-Wag Ctrl. Conn Pin 1 White 14-Way (bottom ctr. Stack)
From R/S – Pin 7 Gray 14-Way (bottom ctr. stack)
WH-BN
VT
BN
BN-VT
VT-OG
CENCOM
2
1
6
3
7
8
10
BK
BN-VT Backlight
1 YE
2 BU-WH
3 None
To siren spkr (behind front fascia)
To LH Trunk Light
To Trunk Ajar, Int Ltg, Trnk Lt.
To Decklid Lamp
From Decklid
BU-GY
From SPDJB - RR Turn Lamp
From PDB – RR Body Lighting Fuse
From SPDJB - LR Turn Lamp

N0177557

Section 2: Electrical

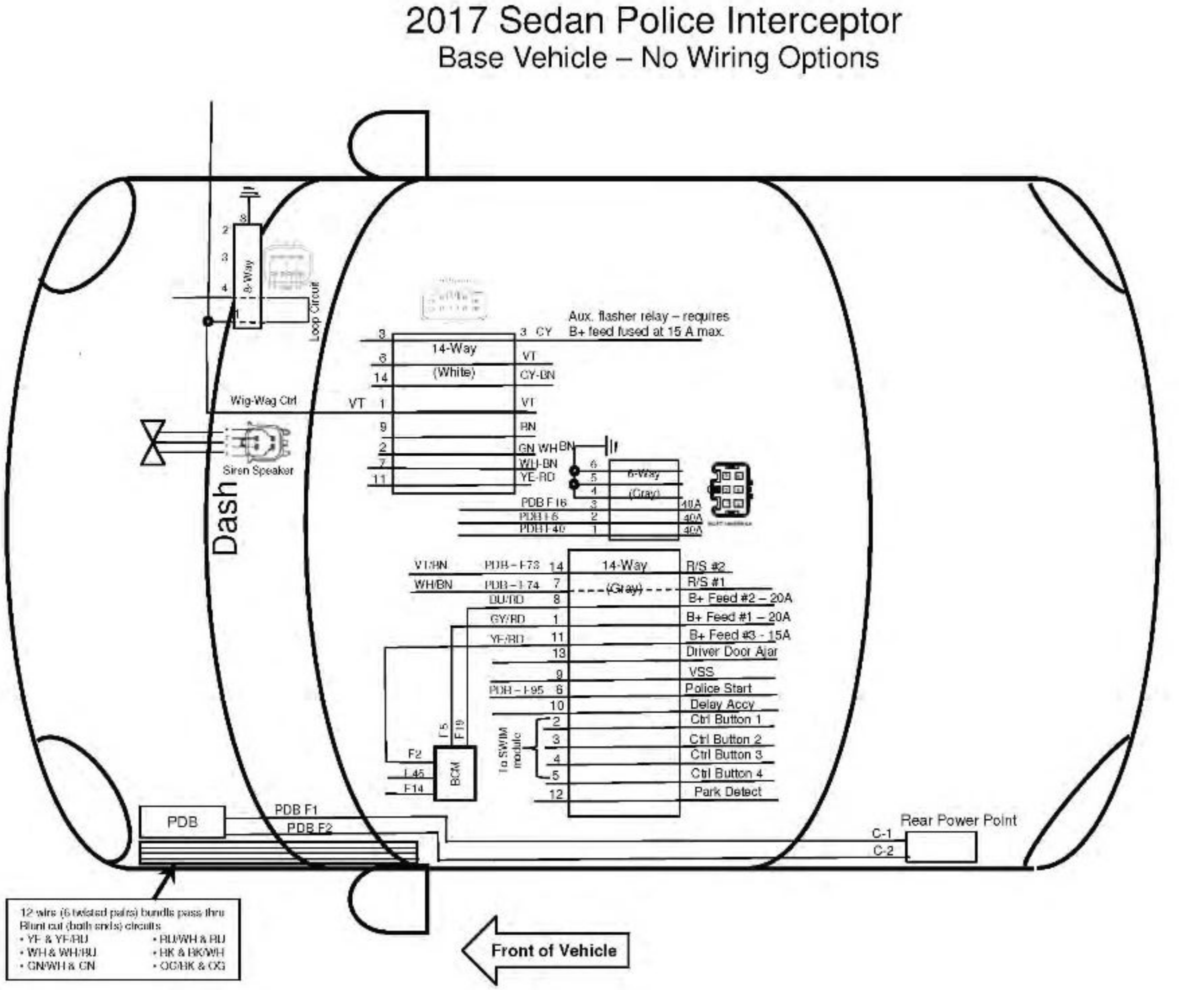
2017 Sedan Police Interceptor Base Vehicles - No Wiring Options

Section 2: Electrical


2017 Sedan Police Interceptor – Option 60A
Front Wire Prep – Option
Aux. flasher relay – requires
B+ feed fused at 15 A max.
3 GY
VT
GY-BN
VT
BN
GN-WH
WH-BN
YE-RD
14-Way
(White)
3
6
14
1
9
2
7
11
BN-YE
VT
14-Way
(Gray)
7
BCM
C2-45
C3-14
Siren Speaker
BU-WH
YE
Front of Vehicle
Loop Circuit
VT
1
F68
Pwr Dist
Box
YE-GN
VT-OG
Dash
2-Way
11
12
1 VT
VT
8-Way
2
3
4
1
Wig-Wag Ctr
BN
4-Way
4
1
2
Wig Wag R/S - VT-BN
LH Prim Pwr GY
4-Way
1
BN-YE
VT-OR
GY-BN
4-Way
1
2
3
4
Relay Flasher
VT-BN
YE-VT
4
6-Way
1
2
3
GY-BN
WRN Flshr
4-Way
1
2
GY-BN
BK-GY
RH Corner
LED Light
GY-OR
4-Way
1
2
3 NC
4
RF Flshr
LF Flshr
Blunt
Blunt
4-Way
4-Way
4-Way
3 NC
2
4-Way
4
BK-GY
LH Corner
LED Light
3
RH Wig-Wag
BK-GY
BK-GY
Grille Lights
BK-GY
LH Wig Wag
SYNC GY-OG

N0177558

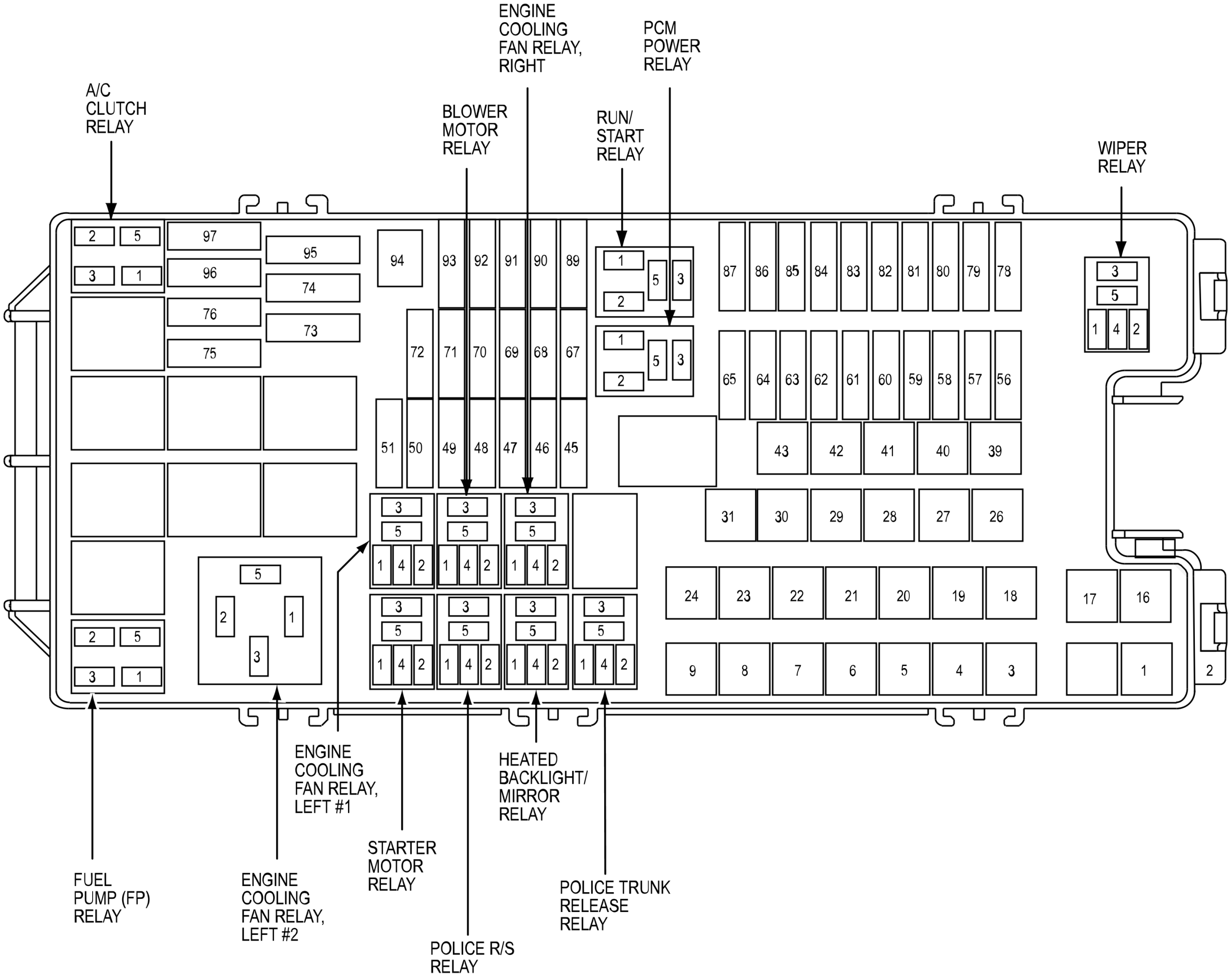
Section 2: Electrical


2017 Sedan Police Interceptor
Base Vehicle – No Wiring Options
Dash
8-Way
Loop Circuit
Wig-Wag Ctrl
Siren Speaker
14-Way
(White)
3 CY
VT
CY-BN
VT
BN
GN WH BN
WH-BN
YE-RD
Aux. flasher relay – requires B+ feed fused at 15 A max.
6-Way
(Gray)
PDB F16
PDB F6
PDB F40
40A
40A
40A
14-Way
(Gray)
VT/BN
WH/BN
PDB – F73
PDB – F74
BU/RD
GY/RD
YE/RD
PDB – F95
R/S #2
R/S #1
B+ Feed #2 – 20A
B+ Feed #1 – 20A
B+ Feed #3 - 15A
Driver Door Ajar
VSS
Police Start
Delay Accy
Ctrl Button 1
Ctrl Button 2
Ctrl Button 3
Ctrl Button 4
Park Detect
To SWIM module
BCM
F5
F19
F2
F45
F14
PDB
PDB F1
PDB F2
Rear Power Point
C-1
C-2
Front of Vehicle
12 wire (6 twisted pairs) bundle pass thru
Blunt cut (both ends) circuits
• YE & YE/BU
• WH & WH/BU
• GN/WH & GN
• BU/WH & BU
• BK & BK/WH
• OG/BK & OG

N0177559

Section 2: Electrical

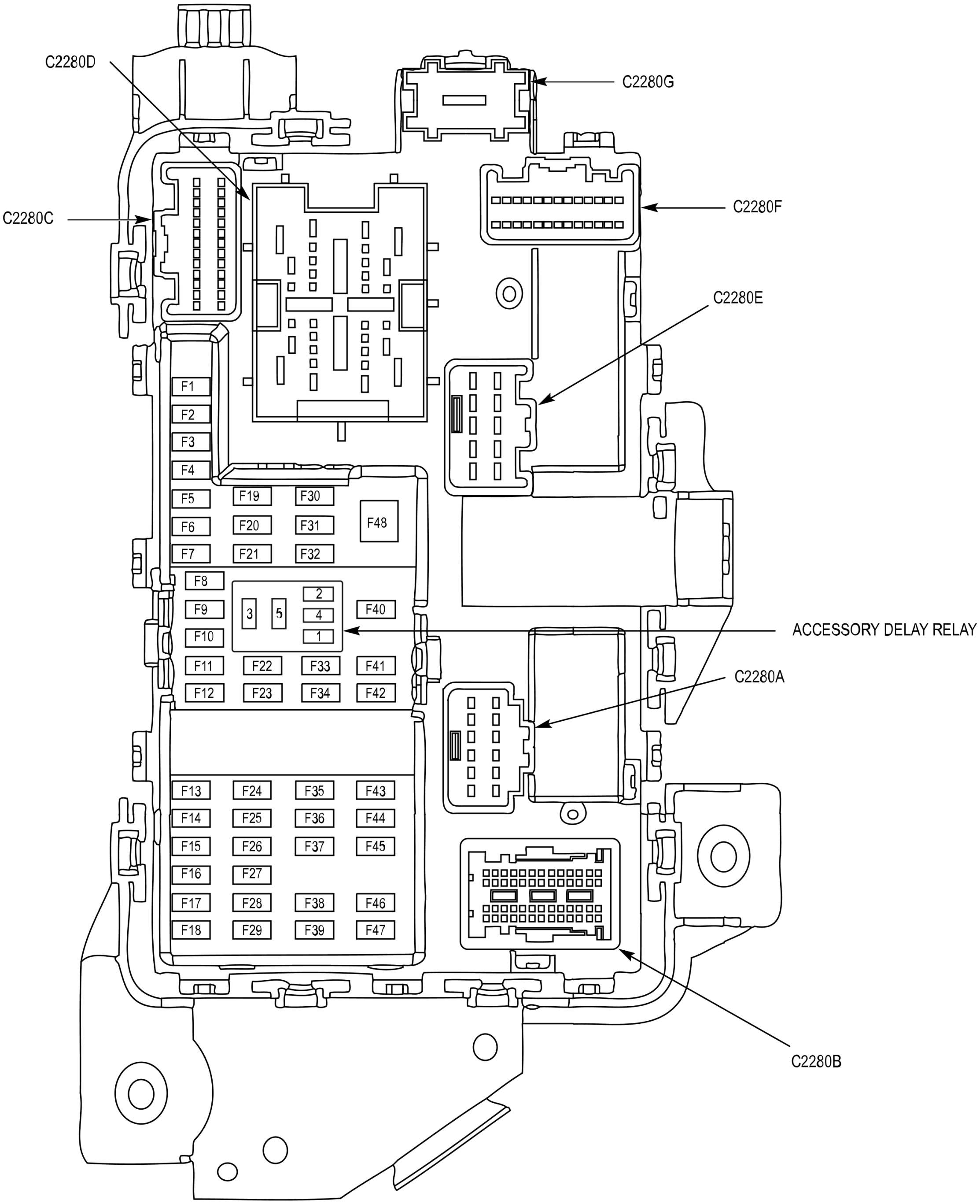
Battery Junction Box (BJB)


ENGINE COOLING FAN RELAY, RIGHT
PCM POWER RELAY
A/C CLUTCH RELAY
BLOWER MOTOR RELAY
RUN/ START RELAY
WIPER RELAY
ENGINE COOLING FAN RELAY, LEFT #1
HEATED BACKLIGHT/ MIRROR RELAY
STARTER MOTOR RELAY
POLICE TRUNK RELEASE RELAY
FUEL PUMP (FP) RELAY
ENGINE COOLING FAN RELAY, LEFT #2
POLICE R/S RELAY
1
2
3
4
5
6
7
8
9
16
17
18
19
20
21
22
23
24
26
27
28
29
30
31
39
40
41
42
43
45
46
47
48
49
50
51
56
57
58
59
60
61
62
63
64
65
67
68
69
70
71
72
73
74
75
76
78
79
80
81
82
83
84
85
86
87
89
90
91
92
93
94
95
96
97

N0142685

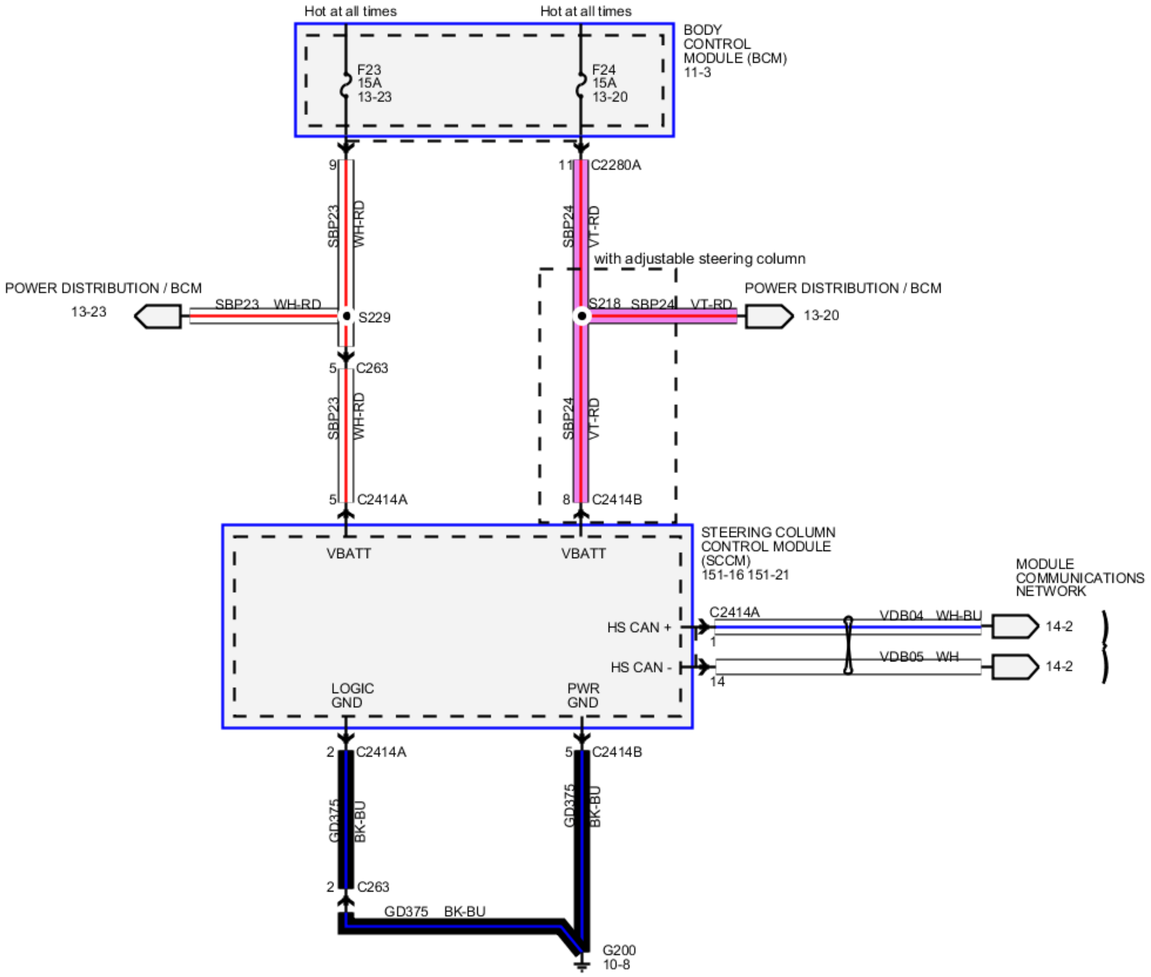
Body Control Module (BCM)

Section 2: Electrical


C2280D
C2280G
C2280C
C2280F
C2280E
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
F20
F21
F22
F23
F24
F25
F26
F27
F28
F29
F30
F31
F32
F33
F34
F35
F36
F37
F38
F39
F40
F41
F42
F43
F44
F45
F46
F47
F48
2
3
5
4
1
ACCESSORY DELAY RELAY
C2280A
C2280B

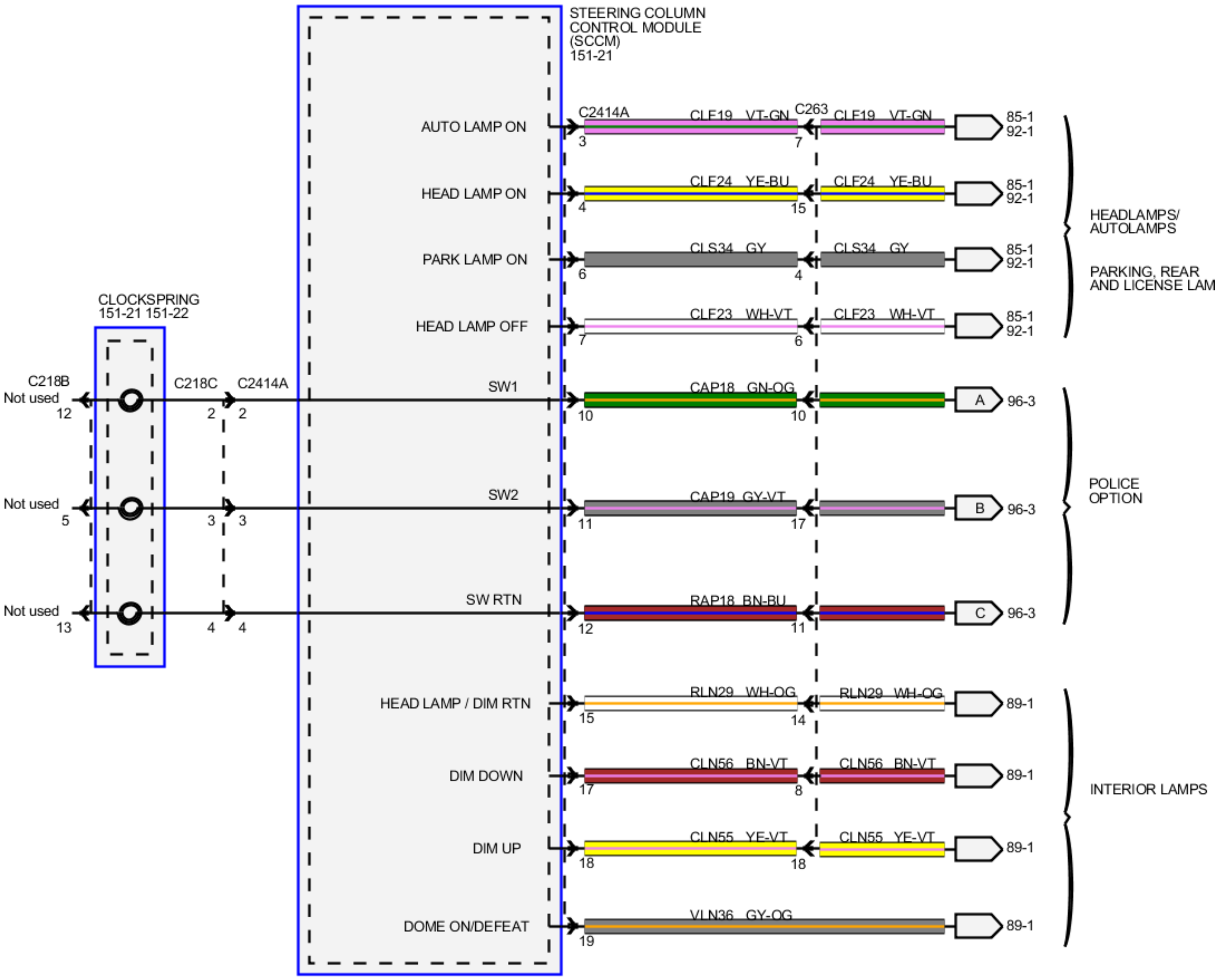
N0142686

Section 2: Electrical


Hot at all times
Hot at all times
BODY CONTROL MODULE (BCM) 11-3
F23 15A 13-23
F24 15A 13-20
9
11
C2280A
SBP23
WH-RD
SBP24
VT-RD
with adjustable steering column
POWER DISTRIBUTION / BCM
13-23
SBP23 WH-RD
S229
S218 SBP24 VT-RD
POWER DISTRIBUTION / BCM
13-20
5
C263
SBP23
WH-RD
SBP24
VT-RD
5
C2414A
8
C2414B
STEERING COLUMN CONTROL MODULE (SCCM) 151-16 151-21
VBATT
VBATT
MODULE COMMUNICATIONS NETWORK
C2414A
HS CAN +
1
VDB04 WH-BU
14-2
HS CAN -
14
VDB05 WH
14-2
LOGIC GND
PWR GND
2
C2414A
5
C2414B
GD375
BK-BU
GD375
BK-BU
2
C263
GD375 BK-BU
G200 10-8

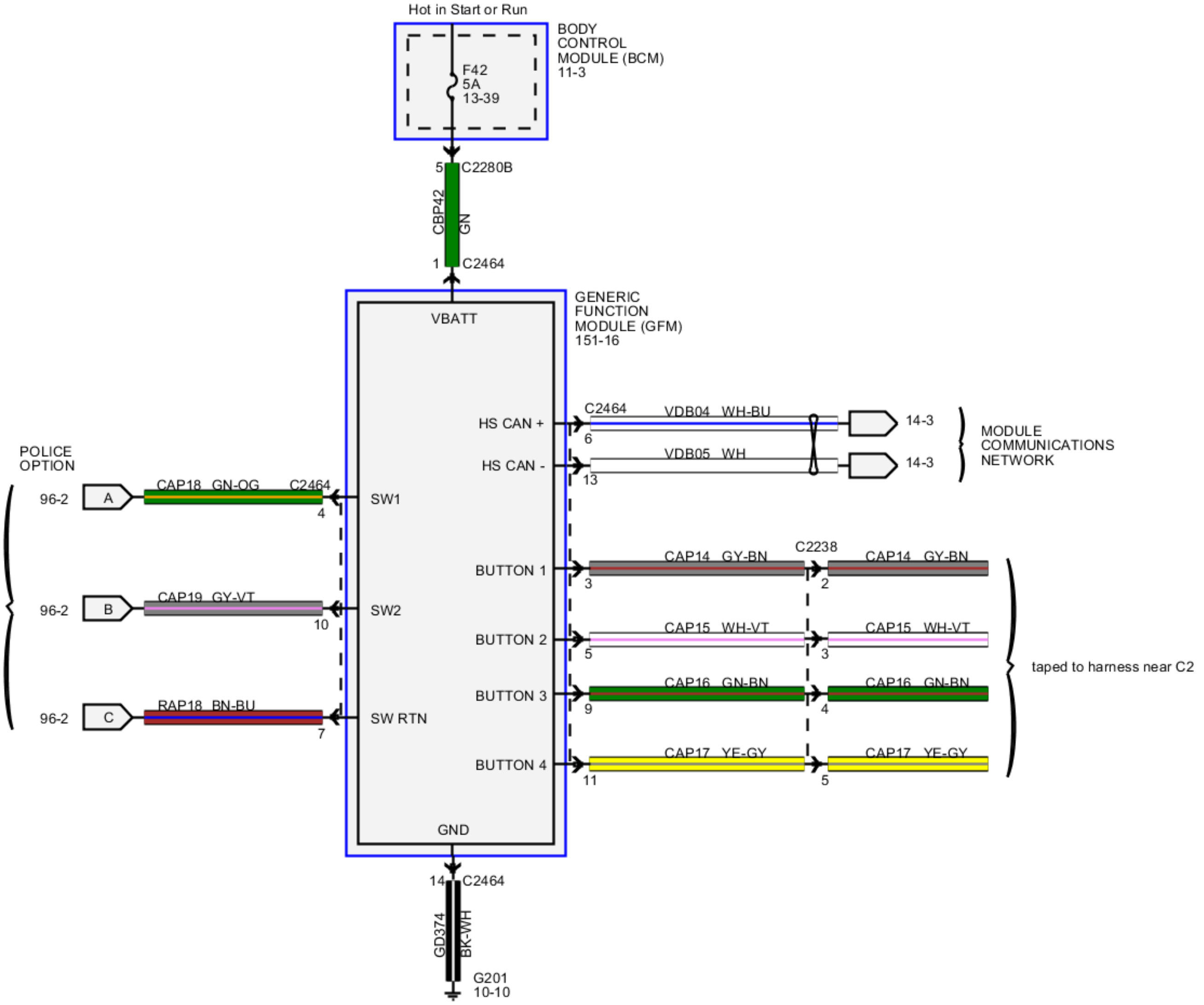
N0163441

Section 2: Electrical


STEERING COLUMN CONTROL MODULE (SCCM) 151-21
AUTO LAMP ON
HEAD LAMP ON
PARK LAMP ON
HEAD LAMP OFF
SW1
SW2
SW RTN
HEAD LAMP / DIM RTN
DIM DOWN
DIM UP
DOME ON/DEFEAT
C2414A
C263
CLF19 VT-GN
CLF24 YE-BU
CLS34 GY
CLF23 WH-VT
CAP18 GN-OG
CAP19 GY-VT
RAP18 BN-BU
RLN29 WH-OG
CLN56 BN-VT
CLN55 YE-VT
VLN36 GY-OG
3
7
4
15
6
4
7
6
10
10
11
17
12
11
15
14
17
8
18
18
19
85-1
92-1
A 96-3
B 96-3
C 96-3
89-1
HEADLAMPS/ AUTOLAMPS
PARKING, REAR AND LICENSE LAM
POLICE OPTION
INTERIOR LAMPS
CLOCKSPRING 151-21 151-22
C218B
Not used
12
Not used
5
Not used
13
C218C
C2414A
2
2
3
3
4
4

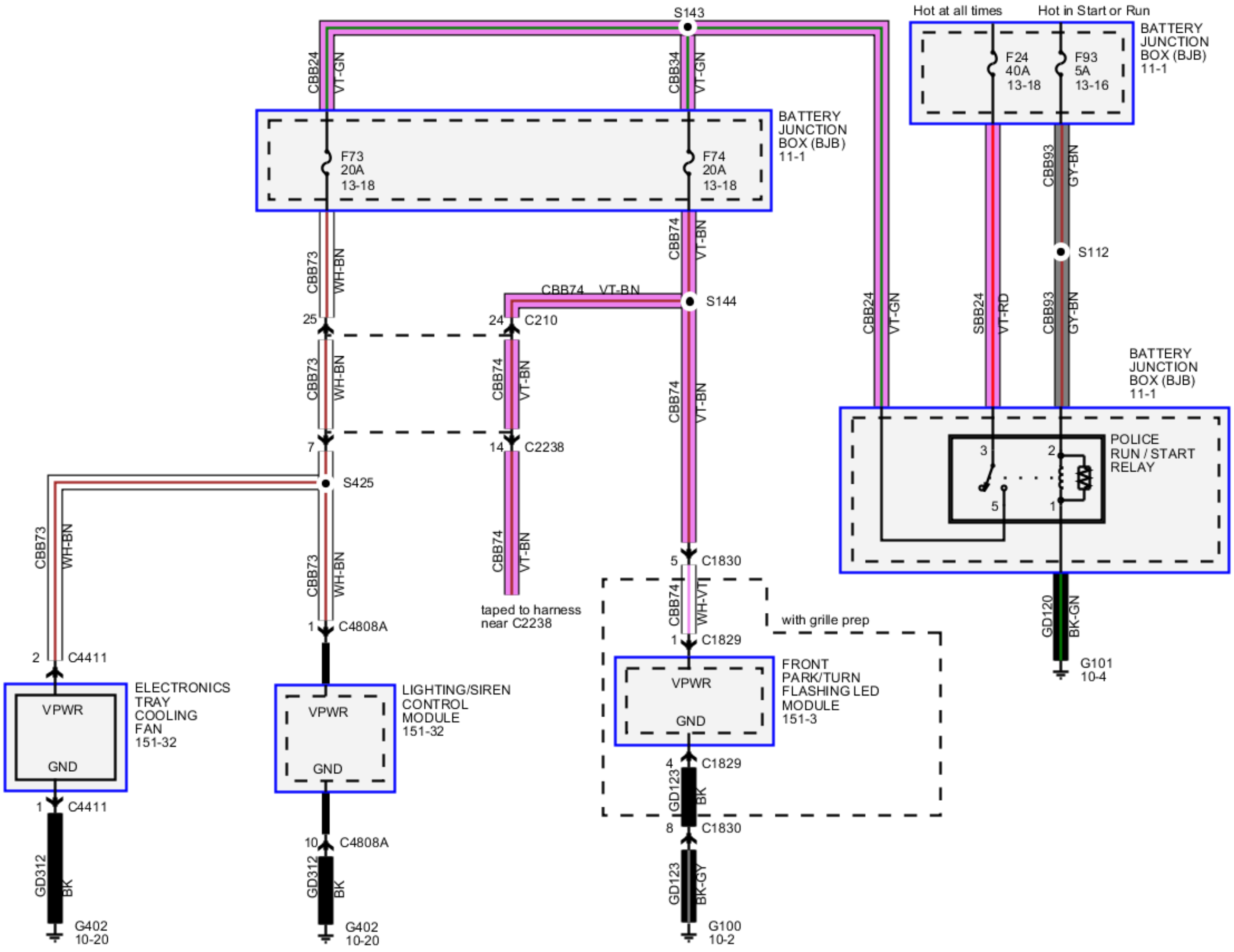
N0163442

Section 2: Electrical


Hot in Start or Run
BODY
CONTROL
MODULE (BCM)
11-3
F42
5A
13-39
5
C2280B
CBP42
GN
1
C2464
GENERIC
FUNCTION
MODULE (GFM)
151-16
VBATT
HS CAN +
HS CAN -
C2464
VDB04 WH-BU
6
VDB05 WH
13
14-3
14-3
MODULE
COMMUNICATIONS
NETWORK
POLICE
OPTION
96-2
A
CAP18 GN-OG
C2464
4
SW1
96-2
B
CAP19 GY-VT
10
SW2
96-2
C
RAP18 BN-BU
7
SW RTN
BUTTON 1
C2238
CAP14 GY-BN
3
CAP14 GY-BN
2
BUTTON 2
CAP15 WH-VT
5
CAP15 WH-VT
3
BUTTON 3
CAP16 GN-BN
9
CAP16 GN-BN
4
BUTTON 4
CAP17 YE-GY
11
CAP17 YE-GY
5
taped to harness near C2
GND
14
C2464
GD374
BK-WH
G201
10-10

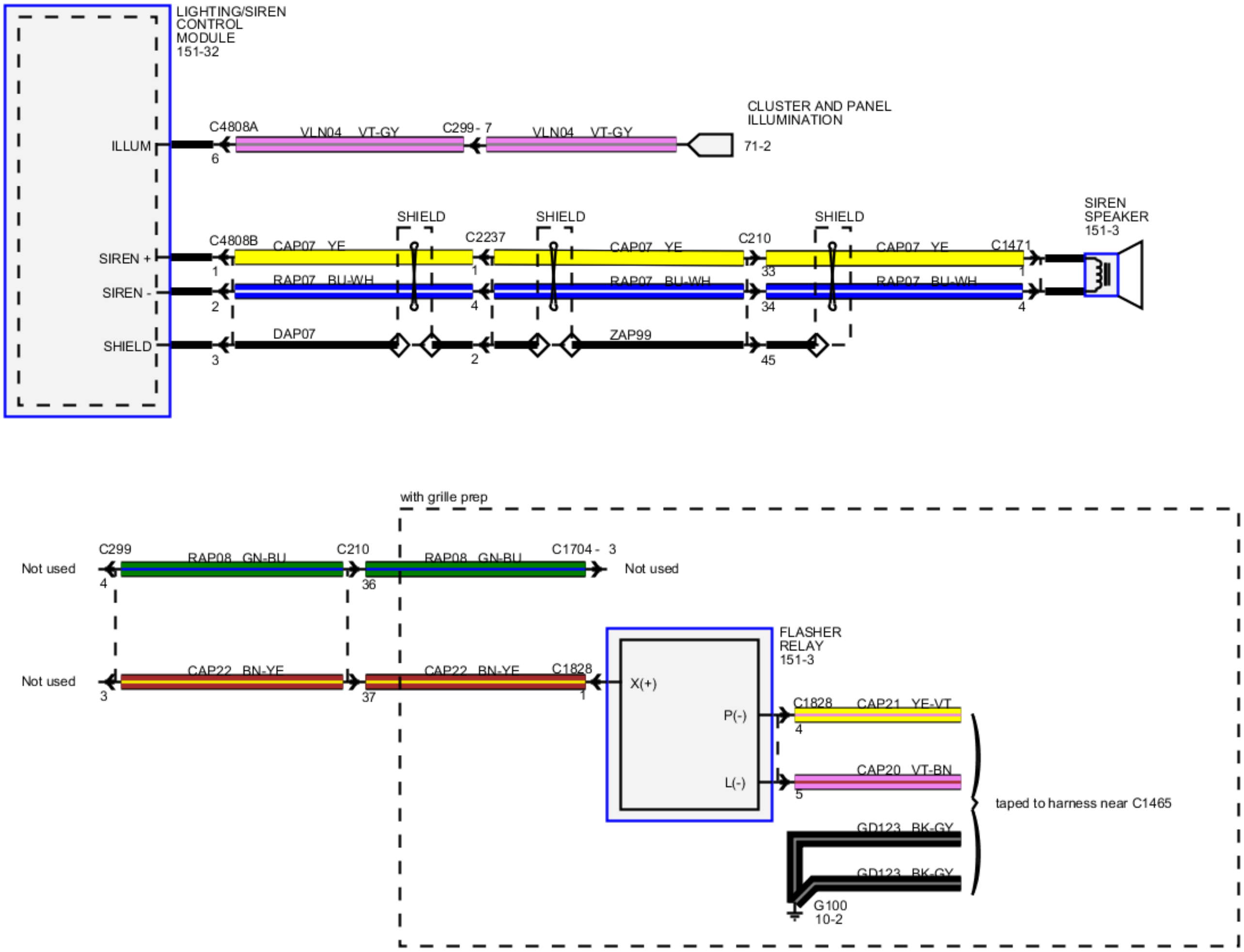
N0163443

Section 2: Electrical


S143
Hot at all times
Hot in Start or Run
BATTERY JUNCTION BOX (BJB) 11-1
F24 40A 13-18
F93 5A 13-16
CBB24 VT-GN
CBB34 VT-GN
BATTERY JUNCTION BOX (BJB) 11-1
F73 20A 13-18
F74 20A 13-18
CBB93 GY-BN
CBB73 WH-BN
CBB74 VT-BN
S112
CBB74 VT-BN
S144
25
24
C210
CBB24 VT-GN
SBB24 VT-RD
CBB93 GY-BN
BATTERY JUNCTION BOX (BJB) 11-1
CBB73 WH-BN
CBB74 VT-BN
CBB74 VT-BN
7
14
C2238
POLICE RUN / START RELAY
3
2
5
1
S425
CBB73 WH-BN
CBB73 WH-BN
CBB74 VT-BN
5
C1830
taped to harness near C2238
CBB74 WH-VT
with grille prep
GD120 BK-GN
1
C4808A
1
C1829
G101 10-4
2
C4411
FRONT PARK/TURN FLASHING LED MODULE 151-3
VPWR
GND
ELECTRONICS TRAY COOLING FAN 151-32
VPWR
GND
LIGHTING/SIREN CONTROL MODULE 151-32
VPWR
GND
4
C1829
GD123 BK
8
C1830
1
C4411
10
C4808A
GD312 BK
GD312 BK
GD123 BK-GY
G402 10-20
G402 10-20
G100 10-2

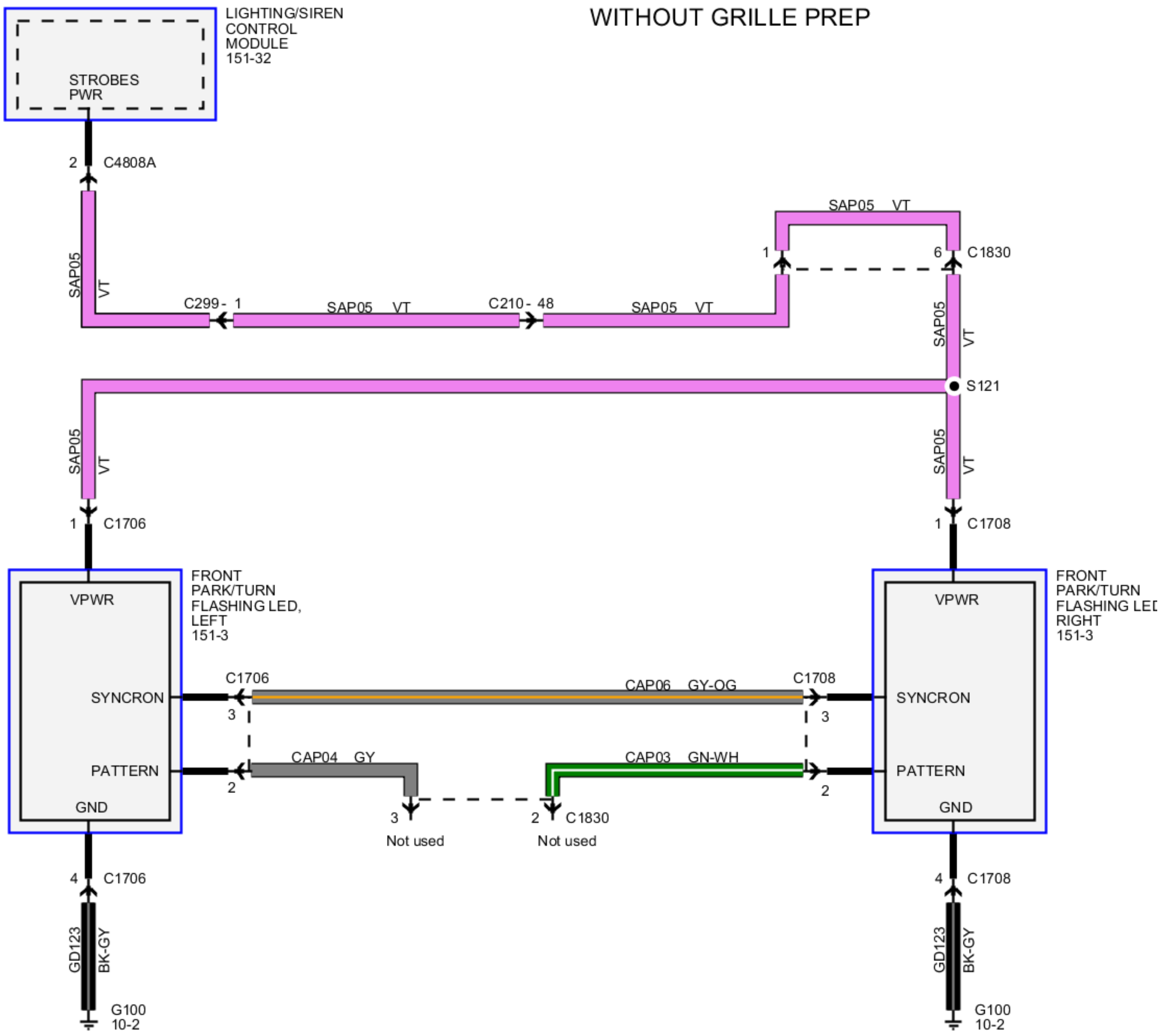
N0163444

Section 2: Electrical


LIGHTING/SIREN
CONTROL
MODULE
151-32
ILLUM
C4808A
6
VLN04 VT-GY
C299 - 7
VLN04 VT-GY
CLUSTER AND PANEL
ILLUMINATION
71-2
SIREN +
SIREN -
SHIELD
C4808B
1
2
3
CAP07 YE
RAP07 BU-WH
DAP07
SHIELD
C2237
1
4
2
SHIELD
CAP07 YE
RAP07 BU-WH
ZAP99
C210
33
34
45
SHIELD
CAP07 YE
RAP07 BU-WH
C1471
1
4
SIREN
SPEAKER
151-3
with grille prep
Not used
C299
4
RAP08 GN-BU
C210
36
RAP08 GN-BU
C1704 - 3
Not used
Not used
3
CAP22 BN-YE
37
CAP22 BN-YE
C1828
1
FLASHER
RELAY
151-3
X(+)
P(-)
L(-)
C1828
4
CAP21 YE-VT
5
CAP20 VT-BN
GD123 BK-GY
GD123 BK-GY
G100
10-2
taped to harness near C1465

N0163445

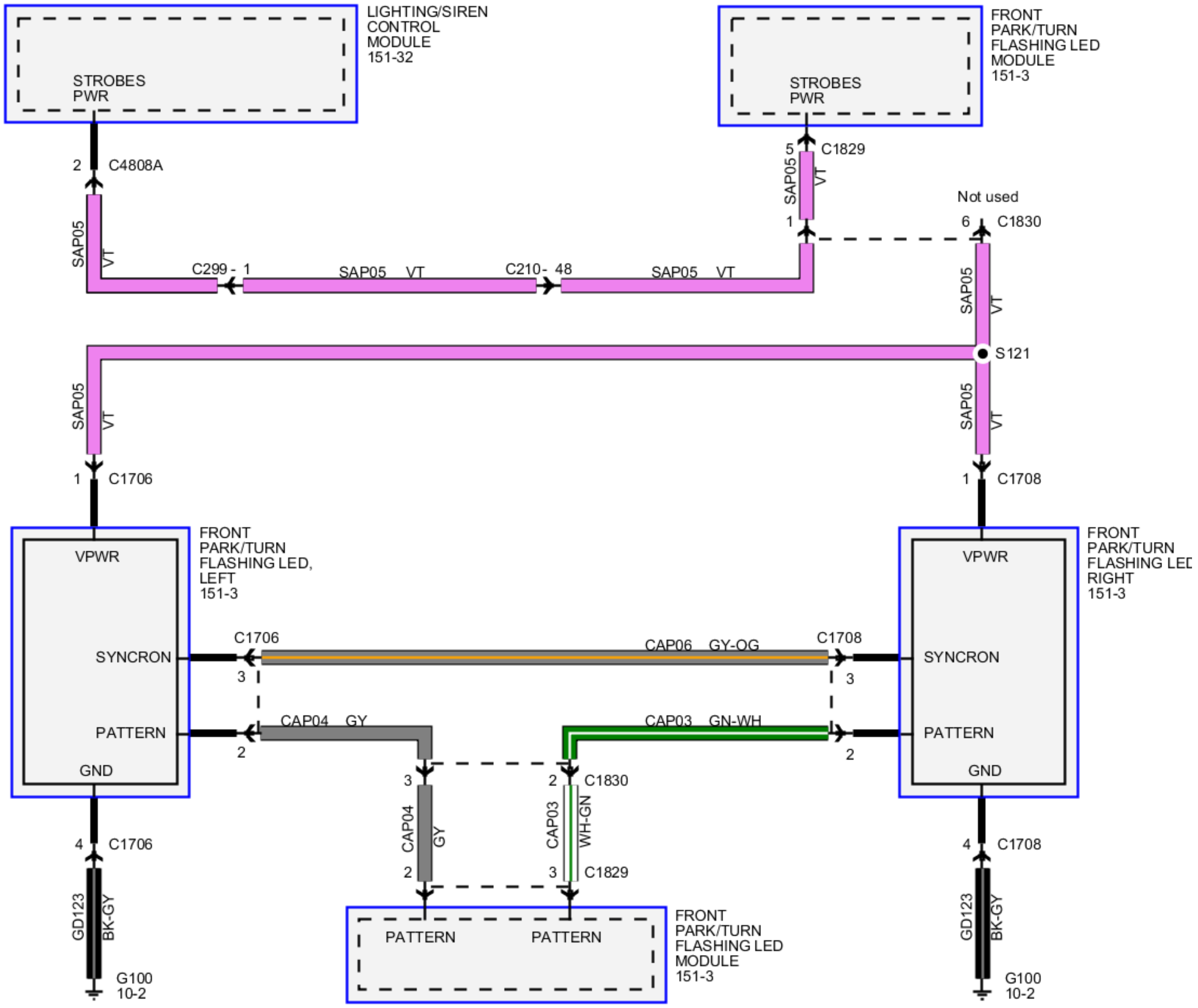
Section 2: Electrical


WITHOUT GRILLE PREP
LIGHTING/SIREN CONTROL MODULE 151-32
STROBES PWR
2 C4808A
SAP05 VT
C299 - 1
SAP05 VT
C210 - 48
SAP05 VT
SAP05 VT
1
6 C1830
SAP05 VT
S121
SAP05 VT
SAP05 VT
1 C1706
1 C1708
FRONT PARK/TURN FLASHING LED, LEFT 151-3
VPWR
SYNCRON
PATTERN
GND
FRONT PARK/TURN FLASHING LEI RIGHT 151-3
VPWR
SYNCRON
PATTERN
GND
C1706
3
CAP06 GY-OG
C1708
3
CAP04 GY
2
CAP03 GN-WH
2
3
Not used
2 C1830
Not used
4 C1706
GD123 BK-GY
G100 10-2
4 C1708
GD123 BK-GY
G100 10-2

N0163446

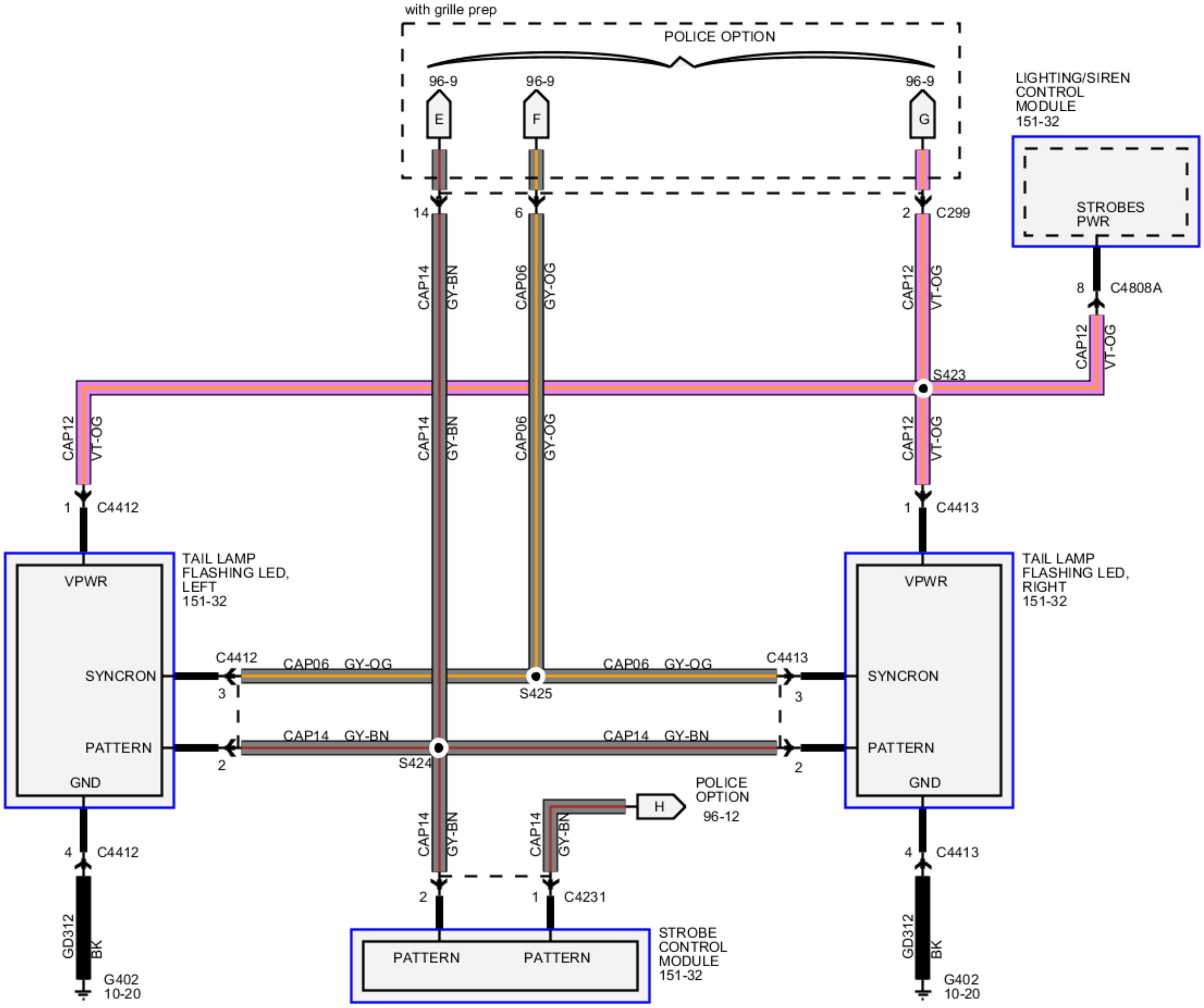
Section 2: Electrical

WITH GRILLE PREP


LIGHTING/SIREN CONTROL MODULE 151-32
STROBES PWR
2
C4808A
SAP05
VT
C299 - 1
SAP05 VT
C210 - 48
SAP05 VT
FRONT PARK/TURN FLASHING LED MODULE 151-3
STROBES PWR
5
C1829
SAP05
VT
1
Not used
6
C1830
SAP05
VT
S121
SAP05
VT
SAP05
VT
1
C1706
1
C1708
FRONT PARK/TURN FLASHING LED, LEFT 151-3
VPWR
SYNCRON
PATTERN
GND
FRONT PARK/TURN FLASHING LEI RIGHT 151-3
VPWR
SYNCRON
PATTERN
GND
C1706
3
CAP06 GY-OG
C1708
3
CAP04 GY
2
CAP03 GN-WH
2
3
2
C1830
CAP04
GY
2
CAP03
WH-GN
3
C1829
4
C1706
GD123
BK-GY
G100 10-2
4
C1708
GD123
BK-GY
G100 10-2
FRONT PARK/TURN FLASHING LED MODULE 151-3
PATTERN
PATTERN

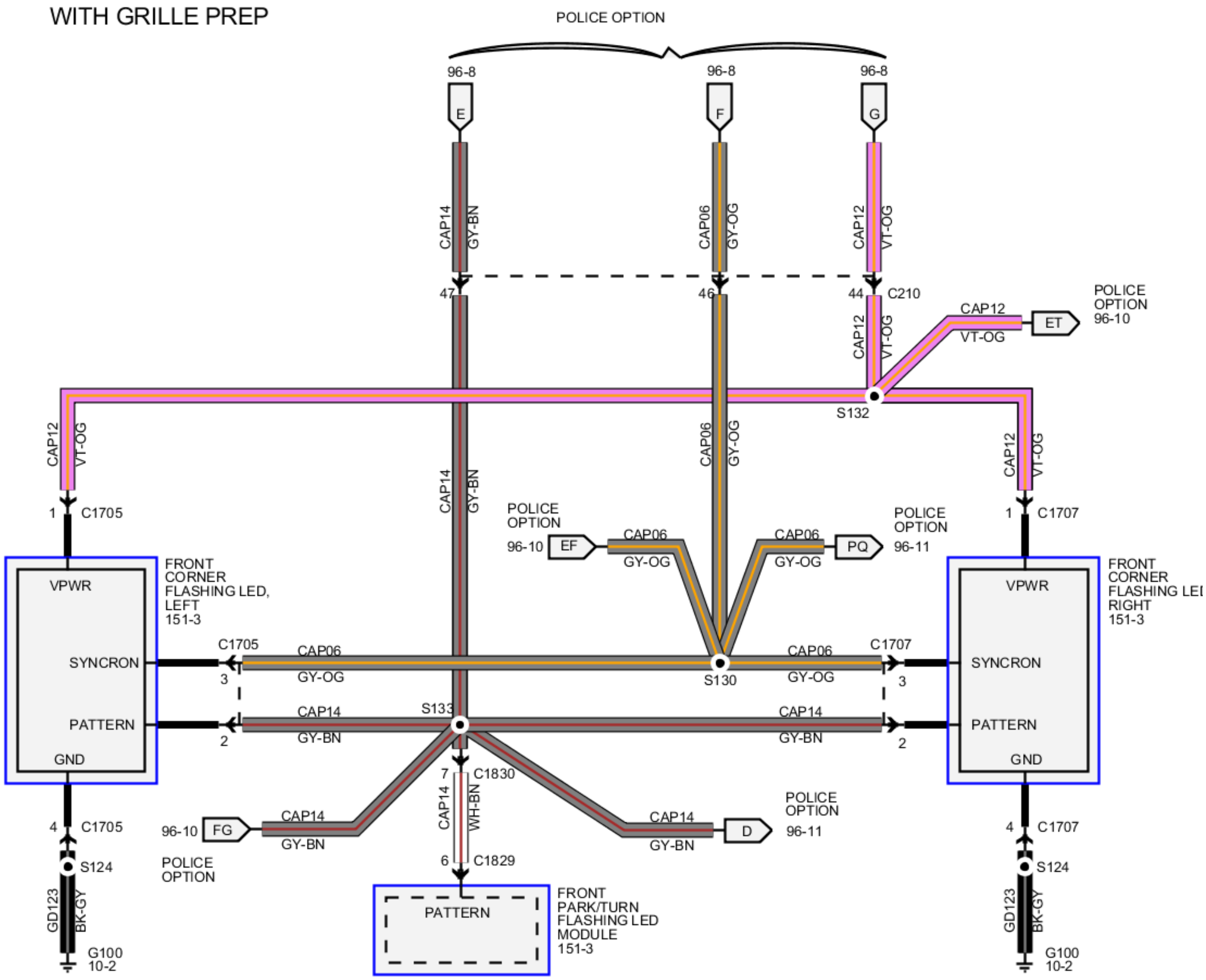
N0163447

Section 2: Electrical


with grille prep
POLICE OPTION
96-9
E
96-9
F
96-9
G
LIGHTING/SIREN CONTROL MODULE 151-32
STROBES PWR
8 C4808A
14
6
2 C299
CAP14 GY-BN
CAP06 GY-OG
CAP12 VT-OG
S423
1 C4412
1 C4413
TAIL LAMP FLASHING LED, LEFT 151-32
TAIL LAMP FLASHING LED, RIGHT 151-32
VPWR
SYNCRON
PATTERN
GND
C4412
C4413
3
2
S425
S424
POLICE OPTION 96-12
H
4 C4412
4 C4413
2
1 C4231
GD312 BK
G402 10-20
STROBE CONTROL MODULE 151-32
PATTERN
PATTERN

N0163448

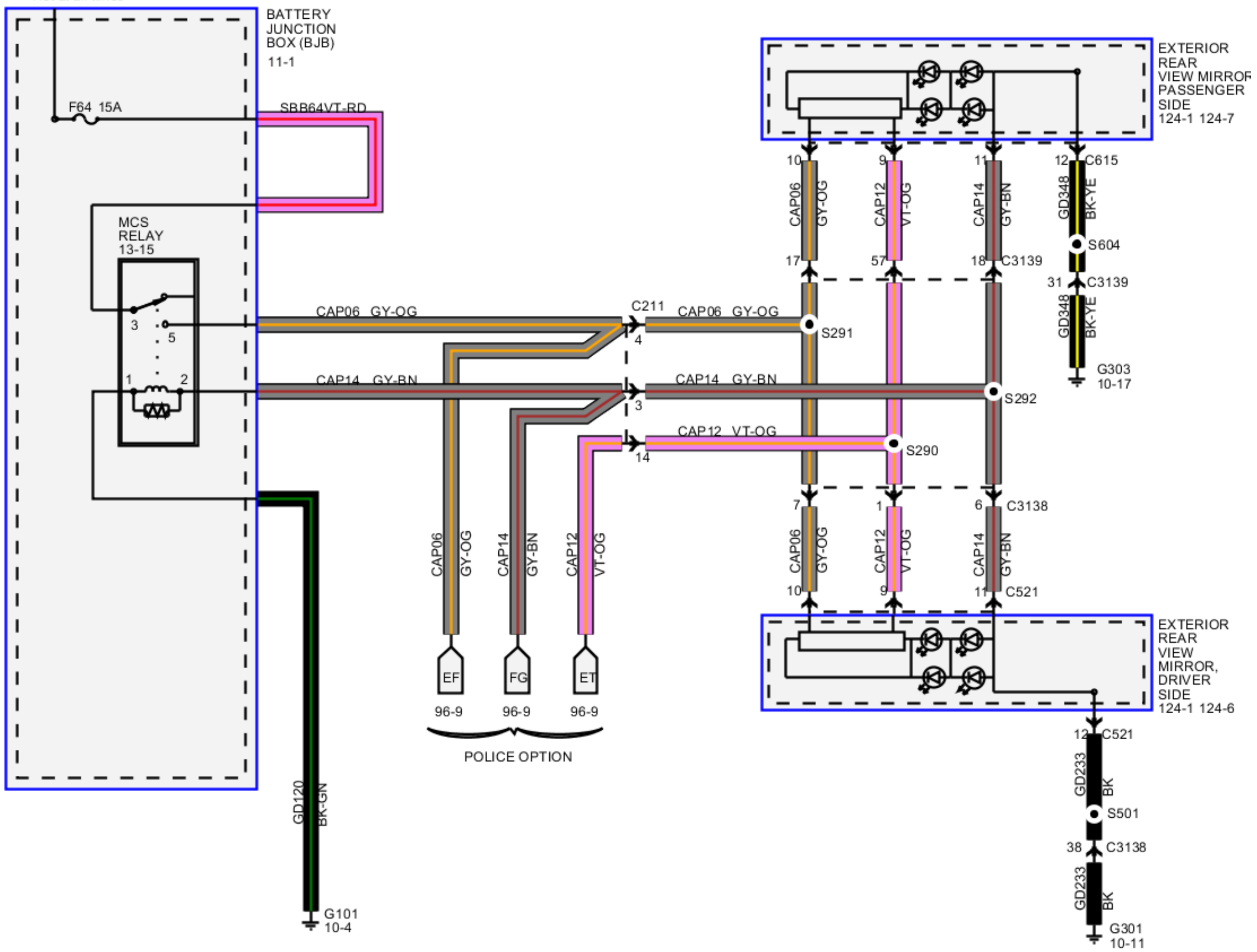
Section 2: Electrical


WITH GRILLE PREP
POLICE OPTION
96-8
E
96-8
F
96-8
G
CAP14
GY-BN
CAP06
GY-OG
CAP12
VT-OG
47
46
44
C210
CAP12
VT-OG
CAP12
VT-OG
ET
POLICE
OPTION
96-10
S132
CAP12
VT-OG
CAP14
GY-BN
CAP06
GY-OG
CAP12
VT-OG
1
C1705
POLICE
OPTION
96-10
EF
CAP06
GY-OG
CAP06
GY-OG
PQ
POLICE
OPTION
96-11
1
C1707
VPWR
FRONT
CORNER
FLASHING LED,
LEFT
151-3
SYNCRON
PATTERN
GND
C1705
CAP06
GY-OG
3
S130
CAP06
GY-OG
C1707
3
CAP14
GY-BN
2
S133
CAP14
GY-BN
2
VPWR
FRONT
CORNER
FLASHING LEI
RIGHT
151-3
SYNCRON
PATTERN
GND
7
C1830
CAP14
WH-BN
6
C1829
4
C1705
96-10
FG
CAP14
GY-BN
POLICE
OPTION
S124
GD123
BK-GY
G100
10-2
CAP14
GY-BN
D
POLICE
OPTION
96-11
4
C1707
S124
GD123
BK-GY
G100
10-2
PATTERN
FRONT
PARK/TURN
FLASHING LED
MODULE
151-3

N0163449

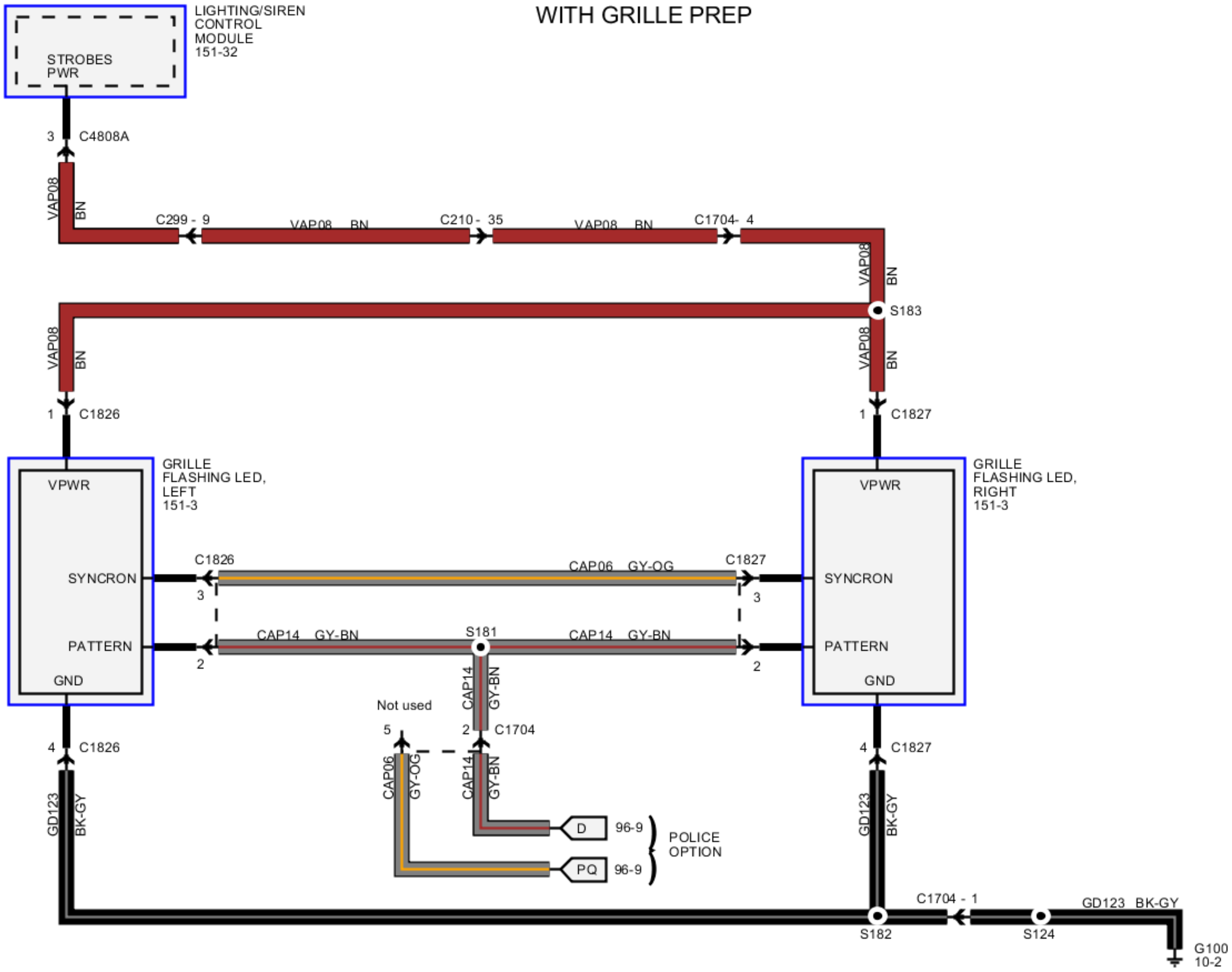
Section 2: Electrical

WITH GRILLE PREP


Hot at all times
BATTERY JUNCTION BOX (BJB)
11-1
F64 15A
SBB64 VT-RD
MCS RELAY
13-15
3
5
1
2
CAP06 GY-OG
CAP14 GY-BN
CAP12 VT-OG
C211
4
3
14
S291
S292
S290
EF
FG
ET
96-9
96-9
96-9
POLICE OPTION
GD120 BK-GN
G101
10-4
EXTERIOR REAR VIEW MIRROR PASSENGER SIDE
124-1 124-7
10
9
11
12
C615
GD348 BK-YE
S604
17
57
18
C3139
31
C3139
G303
10-17
7
1
6
C3138
10
9
11
C521
EXTERIOR REAR VIEW MIRROR, DRIVER SIDE
124-1 124-6
12
C521
GD233 BK
S501
38
C3138
G301
10-11

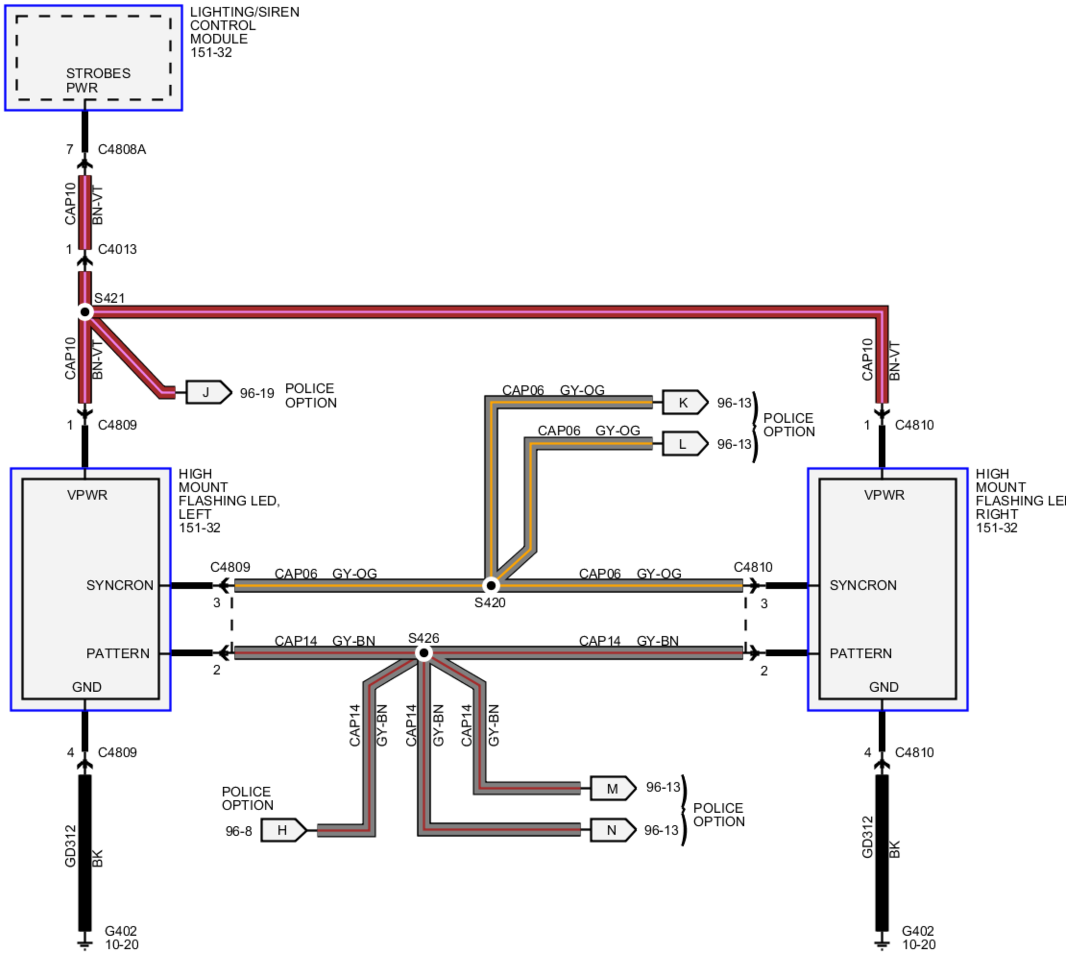
N0163450

Section 2: Electrical


WITH GRILLE PREP
LIGHTING/SIREN CONTROL MODULE 151-32
STROBES PWR
3 C4808A
VAP08 BN
C299 - 9
VAP08 BN
C210 - 35
VAP08 BN
C1704- 4
VAP08 BN
S183
VAP08 BN
VAP08 BN
1 C1826
1 C1827
GRILLE FLASHING LED, LEFT 151-3
VPWR
SYNCRON
PATTERN
GND
GRILLE FLASHING LED, RIGHT 151-3
VPWR
SYNCRON
PATTERN
GND
C1826
3
CAP06 GY-OG
C1827
3
2
CAP14 GY-BN
S181
CAP14 GY-BN
2
CAP14 GY-BN
Not used
5
2 C1704
4 C1826
4 C1827
CAP06 GY-OG
CAP14 GY-BN
GD123 BK-GY
GD123 BK-GY
D 96-9
PQ 96-9
POLICE OPTION
C1704 - 1
GD123 BK-GY
S182
S124
G100 10-2

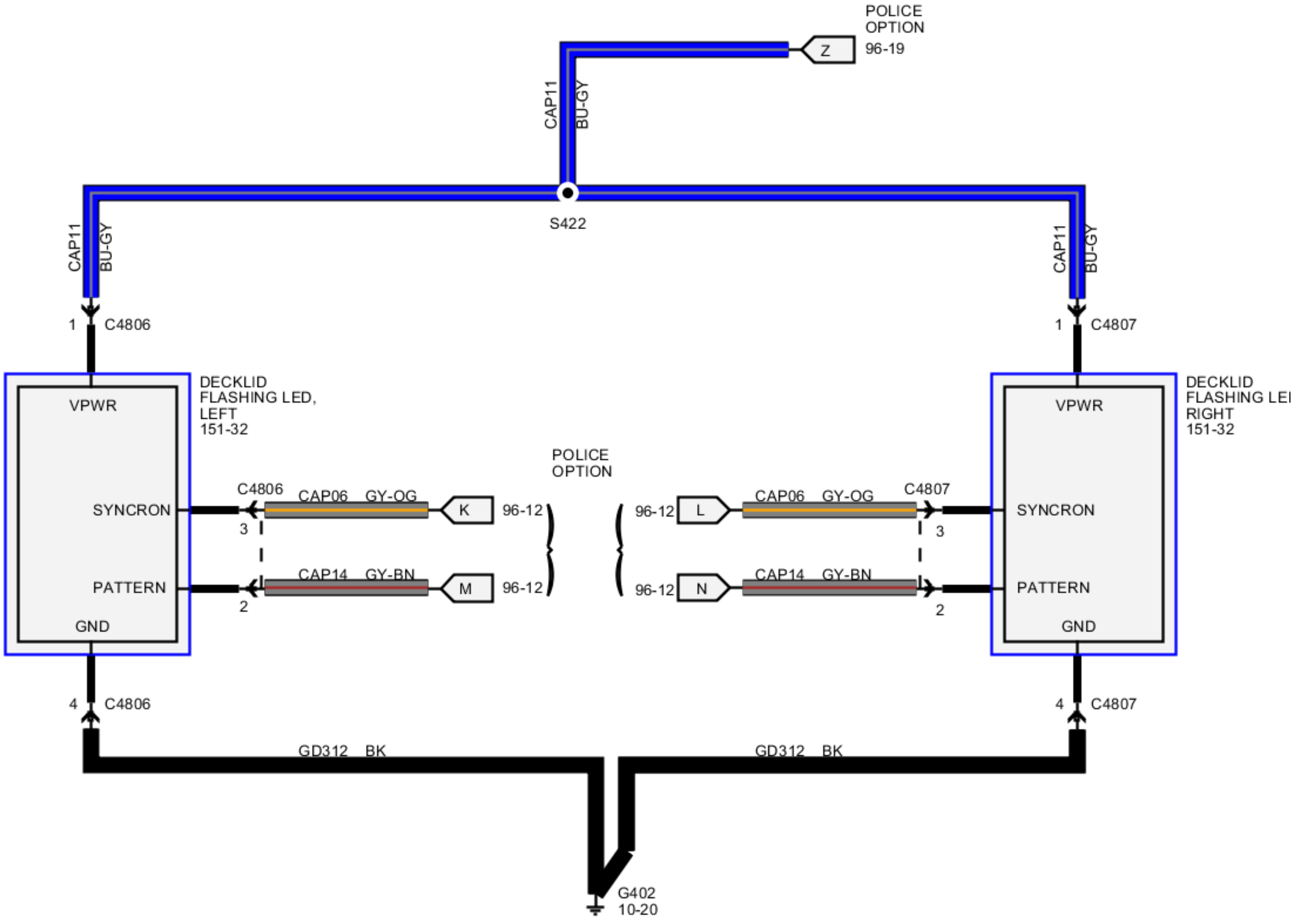
N0163451

Section 2: Electrical


LIGHTING/SIREN
CONTROL
MODULE
151-32
STROBES
PWR
7 C4808A
CAP10 BN-VT
1 C4013
S421
CAP10 BN-VT
J 96-19 POLICE OPTION
1 C4809
CAP10 BN-VT
1 C4810
CAP06 GY-OG
K 96-13
CAP06 GY-OG
L 96-13
POLICE OPTION
HIGH
MOUNT
FLASHING LED,
LEFT
151-32
VPWR
SYNCRON
PATTERN
GND
HIGH
MOUNT
FLASHING LEI
RIGHT
151-32
VPWR
SYNCRON
PATTERN
GND
C4809
CAP06 GY-OG
S420
CAP06 GY-OG
C4810
3
3
CAP14 GY-BN
S426
CAP14 GY-BN
2
2
4 C4809
4 C4810
CAP14 GY-BN
CAP14 GY-BN
CAP14 GY-BN
POLICE OPTION
96-8 H
M 96-13
N 96-13
POLICE OPTION
GD312 BK
GD312 BK
G402 10-20
G402 10-20

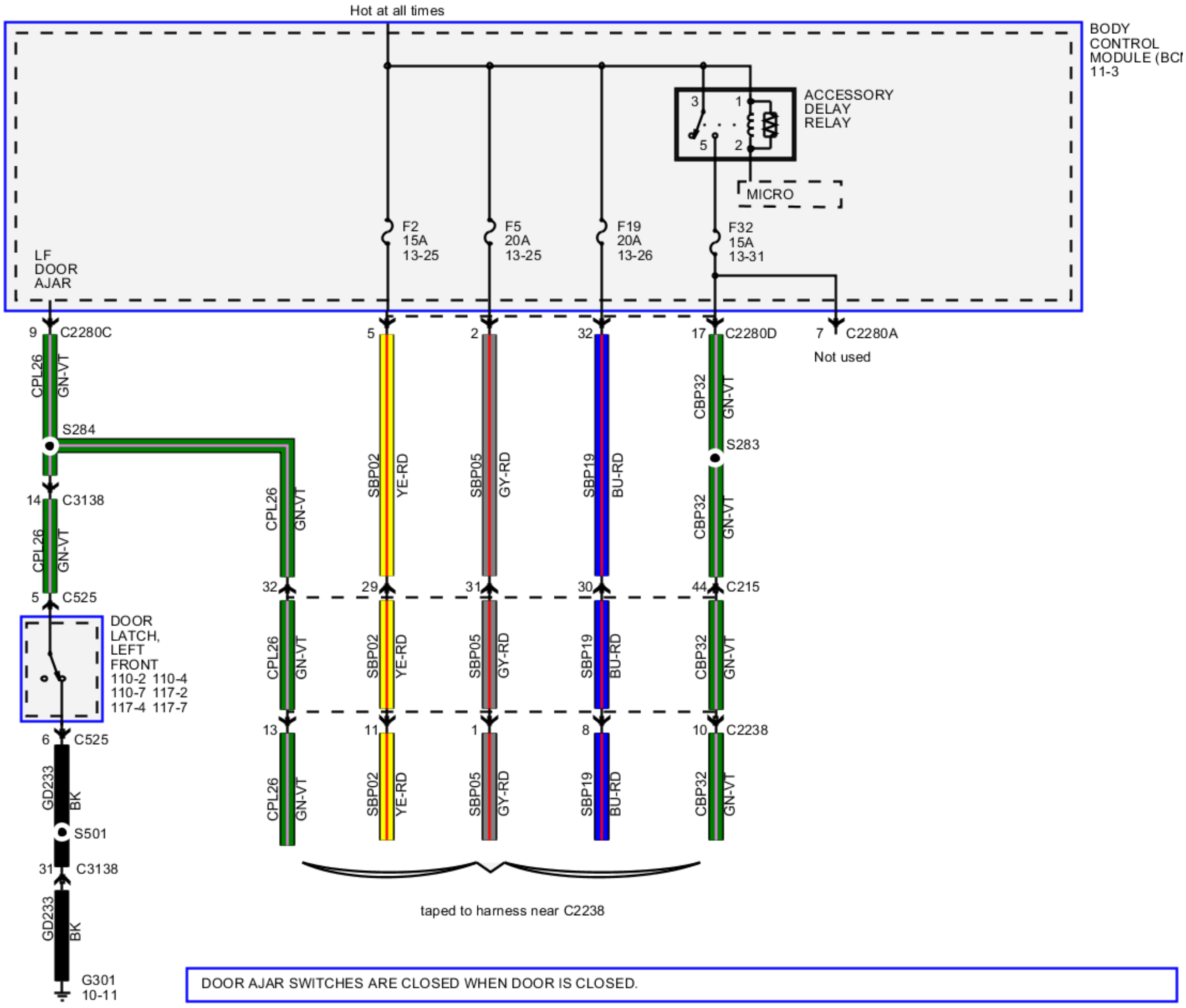
N0163452

Section 2: Electrical


POLICE OPTION
Z
96-19
CAP11
BU-GY
S422
CAP11
BU-GY
1
C4806
CAP11
BU-GY
1
C4807
VPWR
DECKLID FLASHING LED, LEFT
151-32
SYNCRON
PATTERN
GND
C4806
CAP06 GY-OG
K
96-12
3
CAP14 GY-BN
M
96-12
2
POLICE OPTION
96-12
L
CAP06 GY-OG
C4807
3
96-12
N
CAP14 GY-BN
2
VPWR
DECKLID FLASHING LEI
RIGHT
151-32
SYNCRON
PATTERN
GND
4
C4806
4
C4807
GD312 BK
GD312 BK
G402
10-20

N0163453

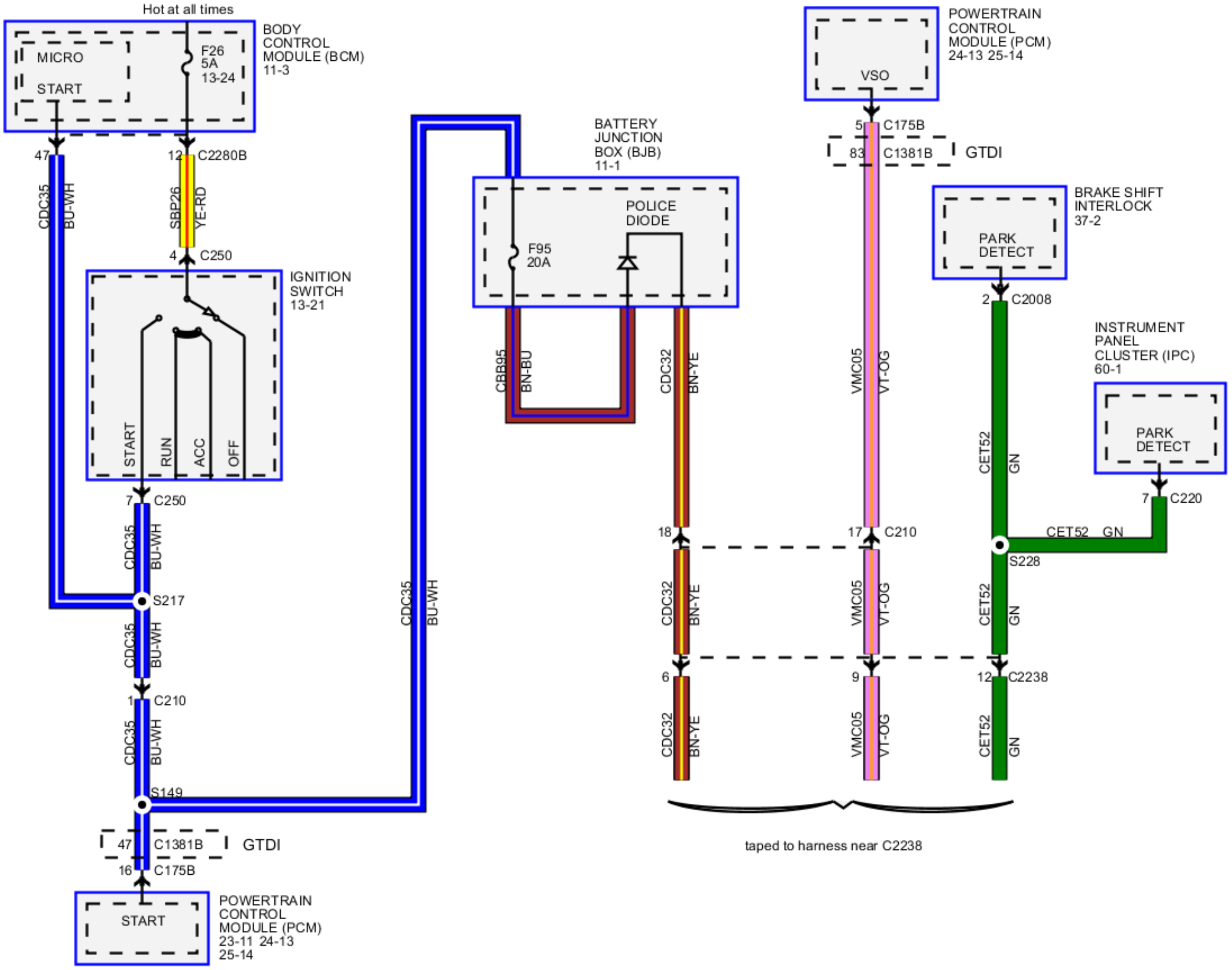
Section 2: Electrical


Hot at all times
BODY CONTROL MODULE (BCI
11-3
ACCESSORY DELAY RELAY
3 1 5 2
MICRO
F2 15A 13-25
F5 20A 13-25
F19 20A 13-26
F32 15A 13-31
LF DOOR AJAR
9 C2280C
5
2
32
17 C2280D
7 C2280A
Not used
CPL26 GN-VT
S284
S283
SBP02 YE-RD
SBP05 GY-RD
SBP19 BU-RD
CBP32 GN-VT
14 C3138
32 29 31 30 44 C215
5 C525
DOOR LATCH, LEFT FRONT 110-2 110-4 110-7 117-2 117-4 117-7
6 C525
13 11 1 8 10 C2238
GD233 BK
S501
31 C3138
G301 10-11
taped to harness near C2238

DOOR AJAR SWITCHES ARE CLOSED WHEN DOOR IS CLOSED.

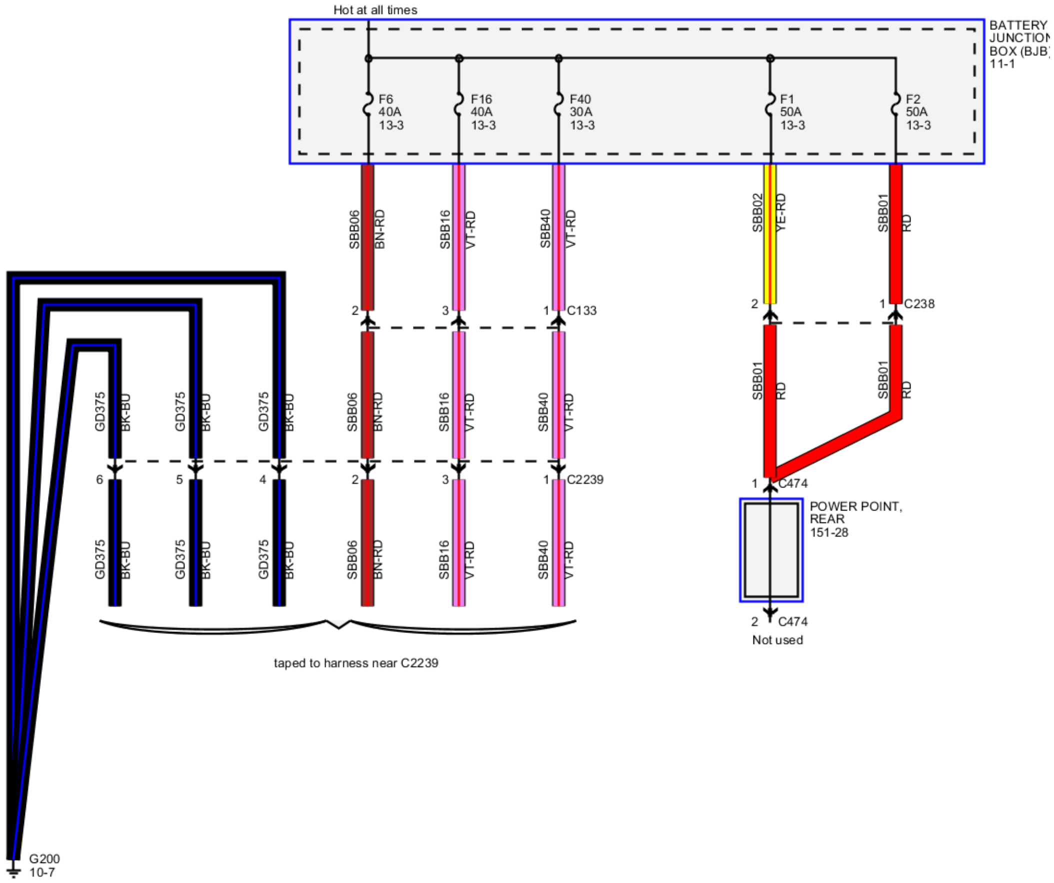
N0163454

Section 2: Electrical


Hot at all times
BODY CONTROL MODULE (BCM) 11-3
MICRO
START
F26
5A
13-24
47
12
C2280B
CDC35
BU-WH
SBP26
YE-RD
4
C250
IGNITION SWITCH 13-21
START
RUN
ACC
OFF
7
C250
CDC35
BU-WH
S217
CDC35
BU-WH
1
C210
CDC35
BU-WH
S149
47
C1381B
GTDI
16
C175B
POWERTRAIN CONTROL MODULE (PCM) 23-11 24-13 25-14
START
CDC35
BU-WH
BATTERY JUNCTION BOX (BJB) 11-1
F95
20A
POLICE DIODE
CBB95
BN-BU
CDC32
BN-YE
18
CDC32
BN-YE
6
CDC32
BN-YE
POWERTRAIN CONTROL MODULE (PCM) 24-13 25-14
VSO
5
C175B
83
C1381B
GTDI
VMC05
VT-OG
17
C210
VMC05
VT-OG
9
VMC05
VT-OG
BRAKE SHIFT INTERLOCK 37-2
PARK DETECT
2
C2008
INSTRUMENT PANEL CLUSTER (IPC) 60-1
PARK DETECT
CET52
GN
7
C220
CET52
GN
S228
CET52
GN
12
C2238
CET52
GN
taped to harness near C2238

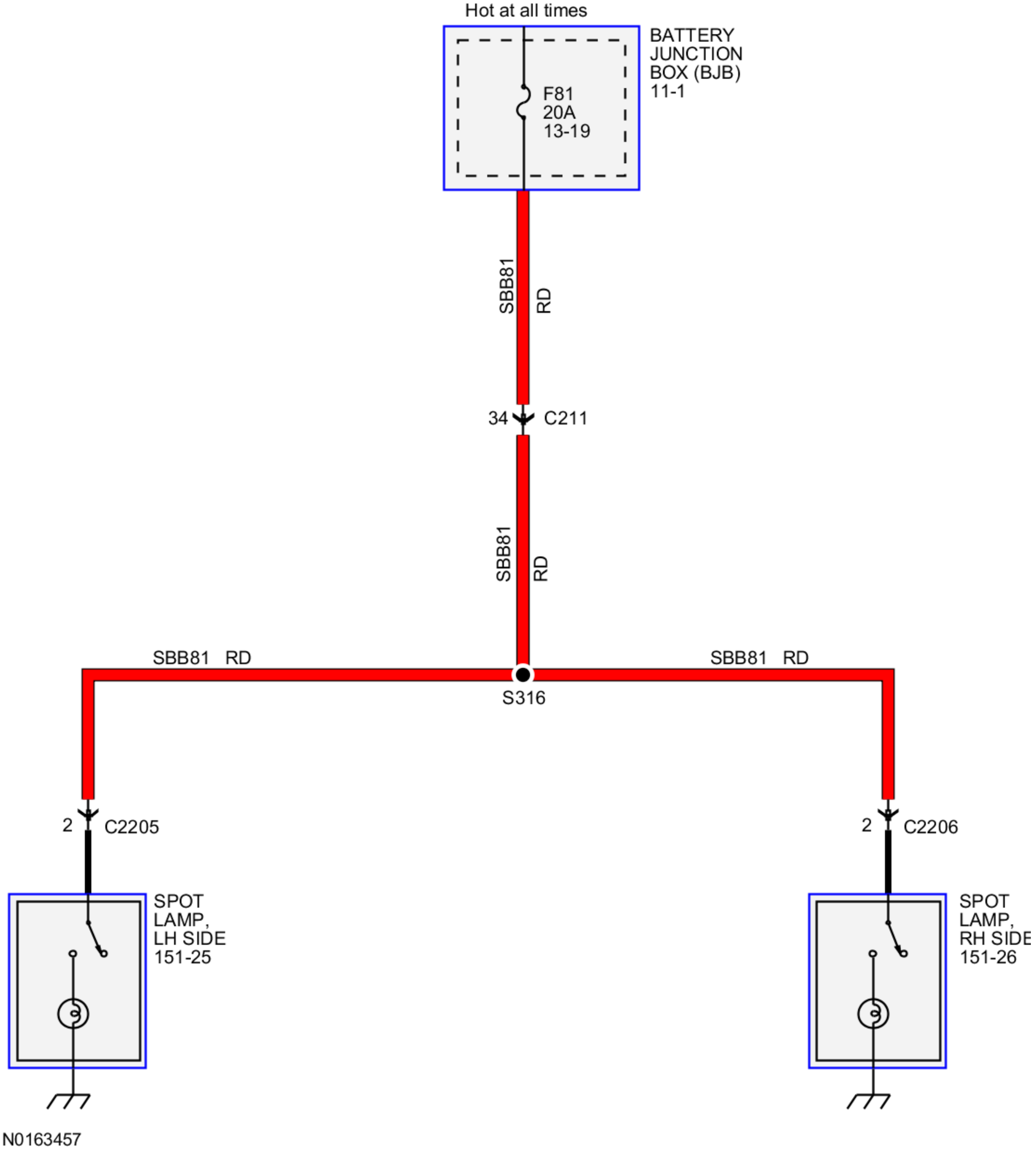
N0163455

Section 2: Electrical

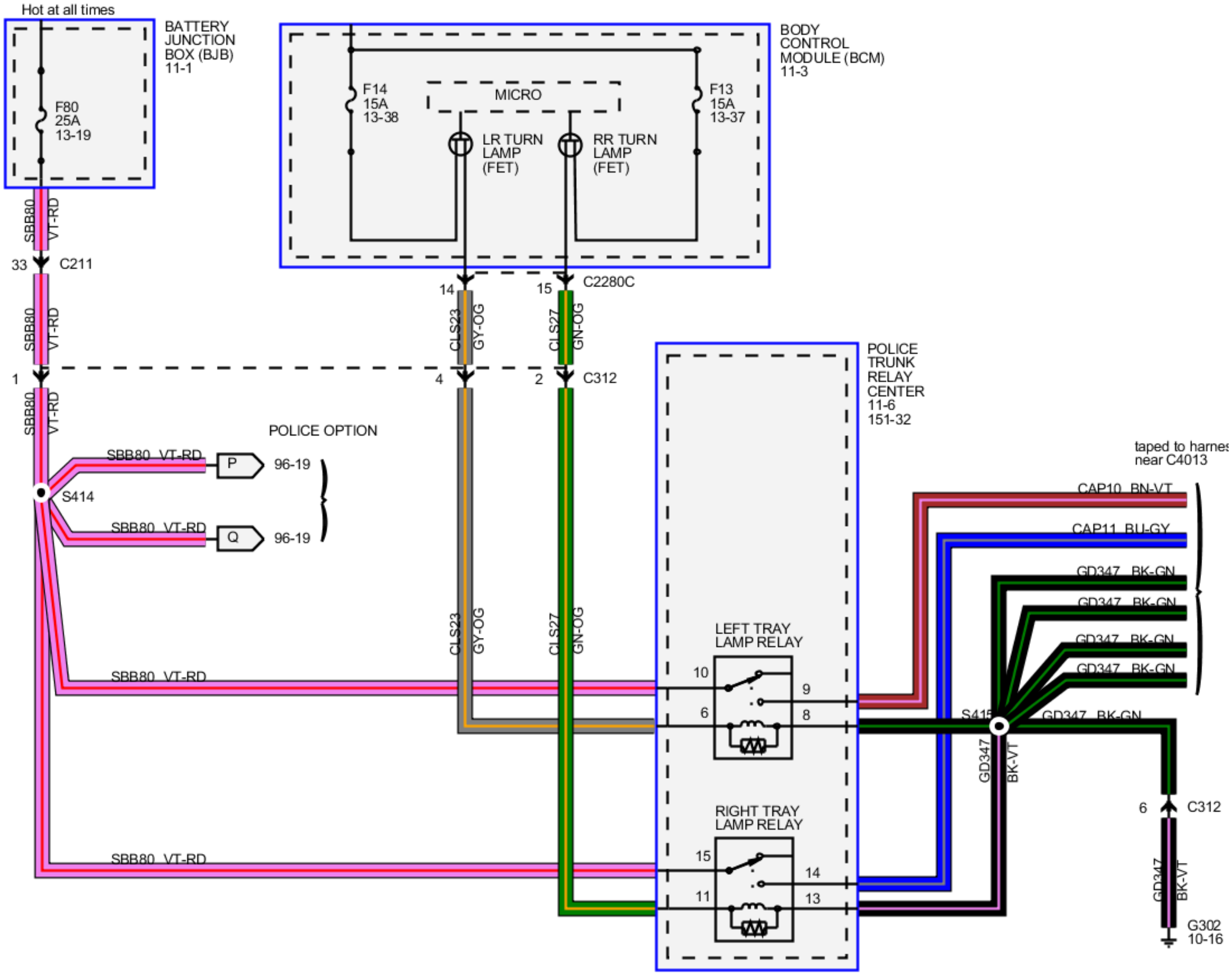

Hot at all times
BATTERY
JUNCTIO
BOX (BJB
11-1
F6
40A
13-3
F16
40A
13-3
F40
30A
13-3
F1
50A
13-3
F2
50A
13-3
SBB06 BN-RD
SBB16 VT-RD
SBB40 VT-RD
SBB02 YE-RD
SBB01 RD
2
3
1 C133
2
1 C238
SBB01 RD
SBB01 RD
GD375 BK-BU
GD375 BK-BU
GD375 BK-BU
SBB06 BN-RD
SBB16 VT-RD
SBB40 VT-RD
6
5
4
2
3
1 C2239
1 C474
POWER POINT,
REAR
151-28
2 C474
Not used
GD375 BK-BU
GD375 BK-BU
GD375 BK-BU
SBB06 BN-RD
SBB16 VT-RD
SBB40 VT-RD
taped to harness near C2239
G200
10-7

N0163456

Section 2: Electrical

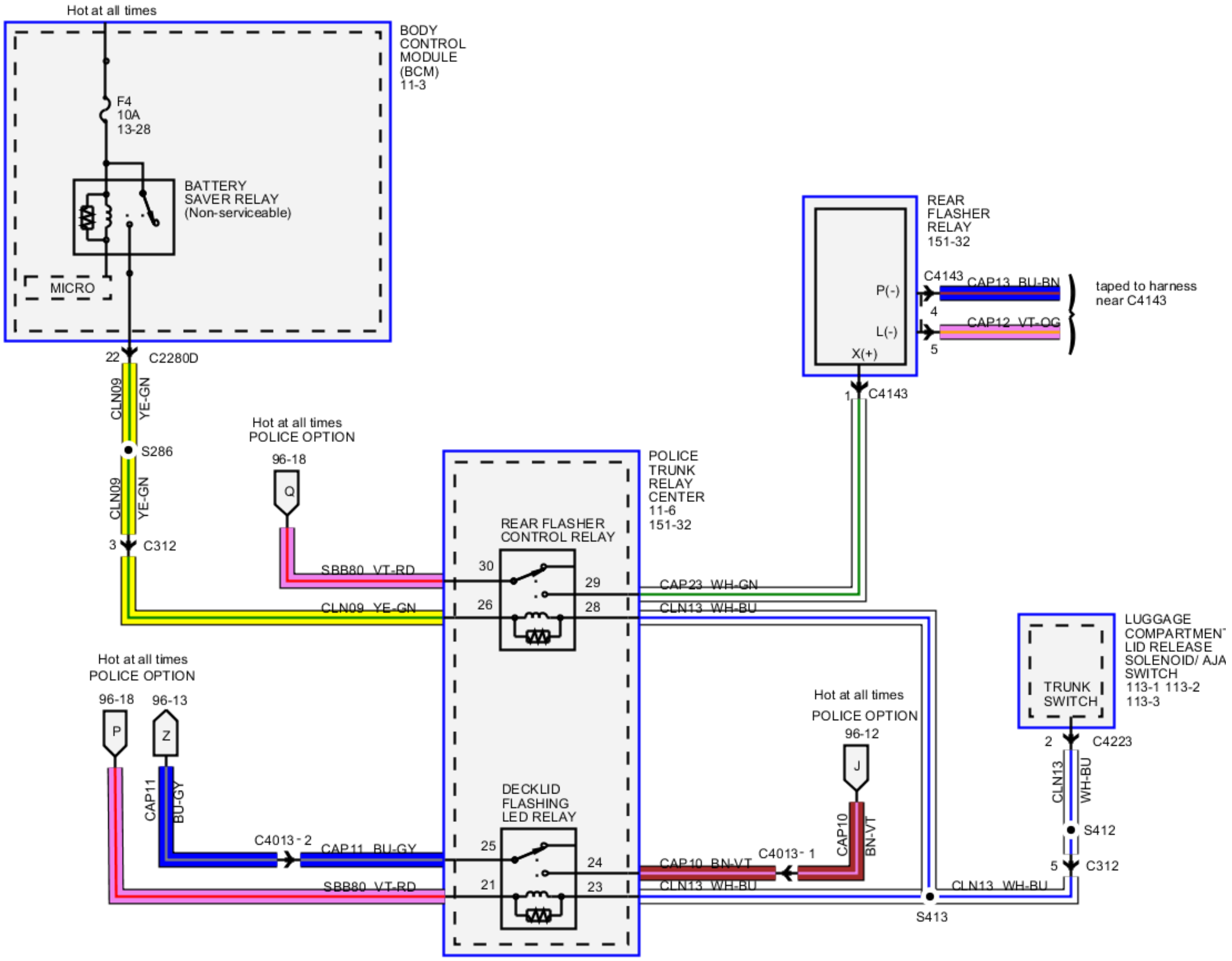

Hot at all times
BATTERY JUNCTION BOX (BJB) 11-1
F81 20A 13-19
SBB81 RD
34 C211
SBB81 RD
SBB81 RD
SBB81 RD
S316
2 C2205
2 C2206
SPOT LAMP, LH SIDE 151-25
SPOT LAMP, RH SIDE 151-26
N0163457

Section 2: Electrical


Hot at all times
BATTERY JUNCTION BOX (BJB) 11-1
F80 25A 13-19
SBB80 VT-RD
33
C211
SBB80 VT-RD
1
SBB80 VT-RD
BODY CONTROL MODULE (BCM) 11-3
F14 15A 13-38
MICRO
F13 15A 13-37
LR TURN LAMP (FET)
RR TURN LAMP (FET)
14
15
C2280C
CLS23 GY-OG
CLS27 GN-OG
4
2
C312
POLICE OPTION
SBB80 VT-RD
P
96-19
S414
SBB80 VT-RD
Q
96-19
CLS23 GY-OG
CLS27 GN-OG
SBB80 VT-RD
SBB80 VT-RD
POLICE TRUNK RELAY CENTER 11-6 151-32
LEFT TRAY LAMP RELAY
10
9
6
8
RIGHT TRAY LAMP RELAY
15
14
11
13
taped to harnes near C4013
CAP10 BN-VT
CAP11 BU-GY
GD347 BK-GN
GD347 BK-GN
GD347 BK-GN
GD347 BK-GN
S415
GD347 BK-GN
GD347 BK-VT
6
C312
GD347 BK-VT
G302 10-16

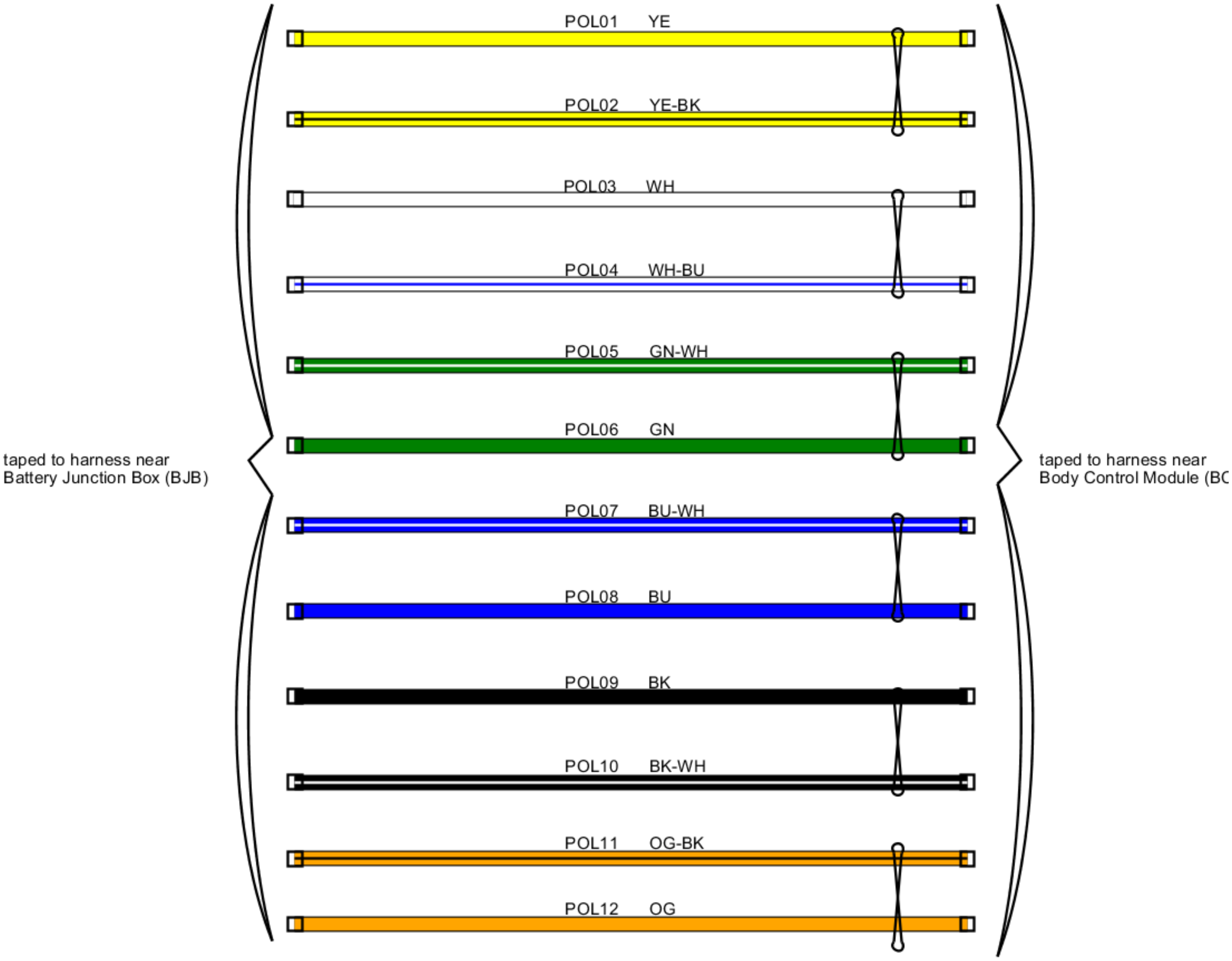
N0163458

Section 2: Electrical


Hot at all times
BODY CONTROL MODULE (BCM) 11-3
F4
10A
13-28
BATTERY SAVER RELAY (Non-serviceable)
MICRO
22
C2280D
CLN09
YE-GN
S286
CLN09
YE-GN
3
C312
Hot at all times
POLICE OPTION
96-18
Q
SBB80 VT-RD
CLN09 YE-GN
POLICE TRUNK RELAY CENTER 11-6 151-32
REAR FLASHER CONTROL RELAY
30
29
26
28
CAP23 WH-GN
CLN13 WH-BU
REAR FLASHER RELAY 151-32
C4143
CAP13 BU-BN
P(-)
4
L(-)
CAP12 VT-OG
5
X(+)
taped to harness near C4143
1
C4143
Hot at all times
POLICE OPTION
96-18
96-13
P
Z
CAP11
BU-GY
C4013 - 2
CAP11 BU-GY
SBB80 VT-RD
DECKLID FLASHING LED RELAY
25
24
21
23
CAP10 BN-VT
C4013 - 1
CLN13 WH-BU
Hot at all times
POLICE OPTION
96-12
J
CAP10
BN-VT
S413
CLN13 WH-BU
LUGGAGE COMPARTMEN LID RELEASE SOLENOID/ AJA SWITCH 113-1 113-2 113-3
TRUNK SWITCH
2
C4223
CLN13
WH-BU
S412
5
C312

N0163459

Section 2: Electrical

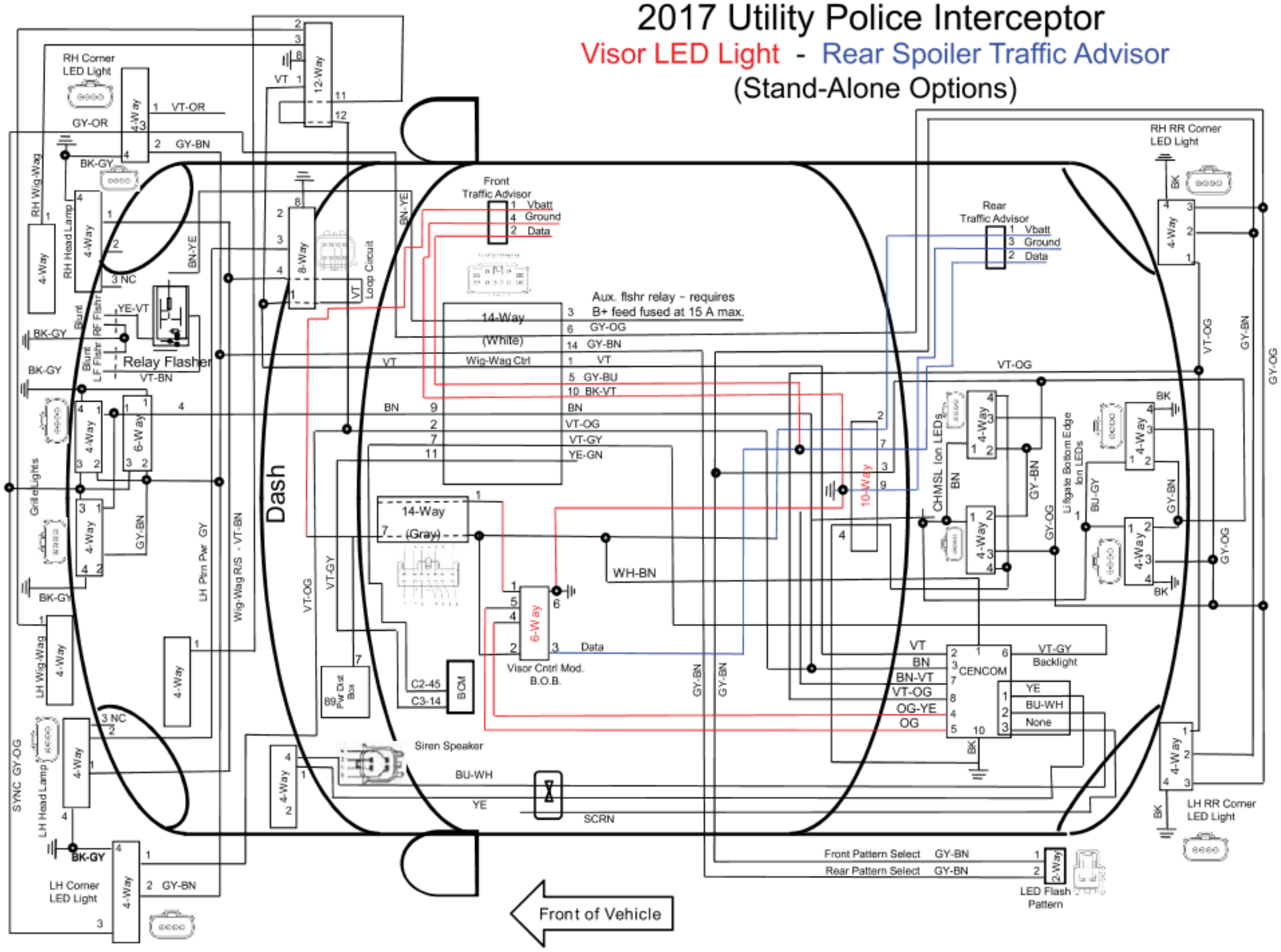

POL01 YE
POL02 YE-BK
POL03 WH
POL04 WH-BU
POL05 GN-WH
POL06 GN
POL07 BU-WH
POL08 BU
POL09 BK
POL10 BK-WH
POL11 OG-BK
POL12 OG
taped to harness near Battery Junction Box (BJB)
taped to harness near Body Control Module (BC

N0163460

NEW Utility — Wiring Diagrams: Police Interceptor Battery Junction Box (BJB)

Utility Wiring Package Options

Section 2: Electrical


2017 Utility Police Interceptor

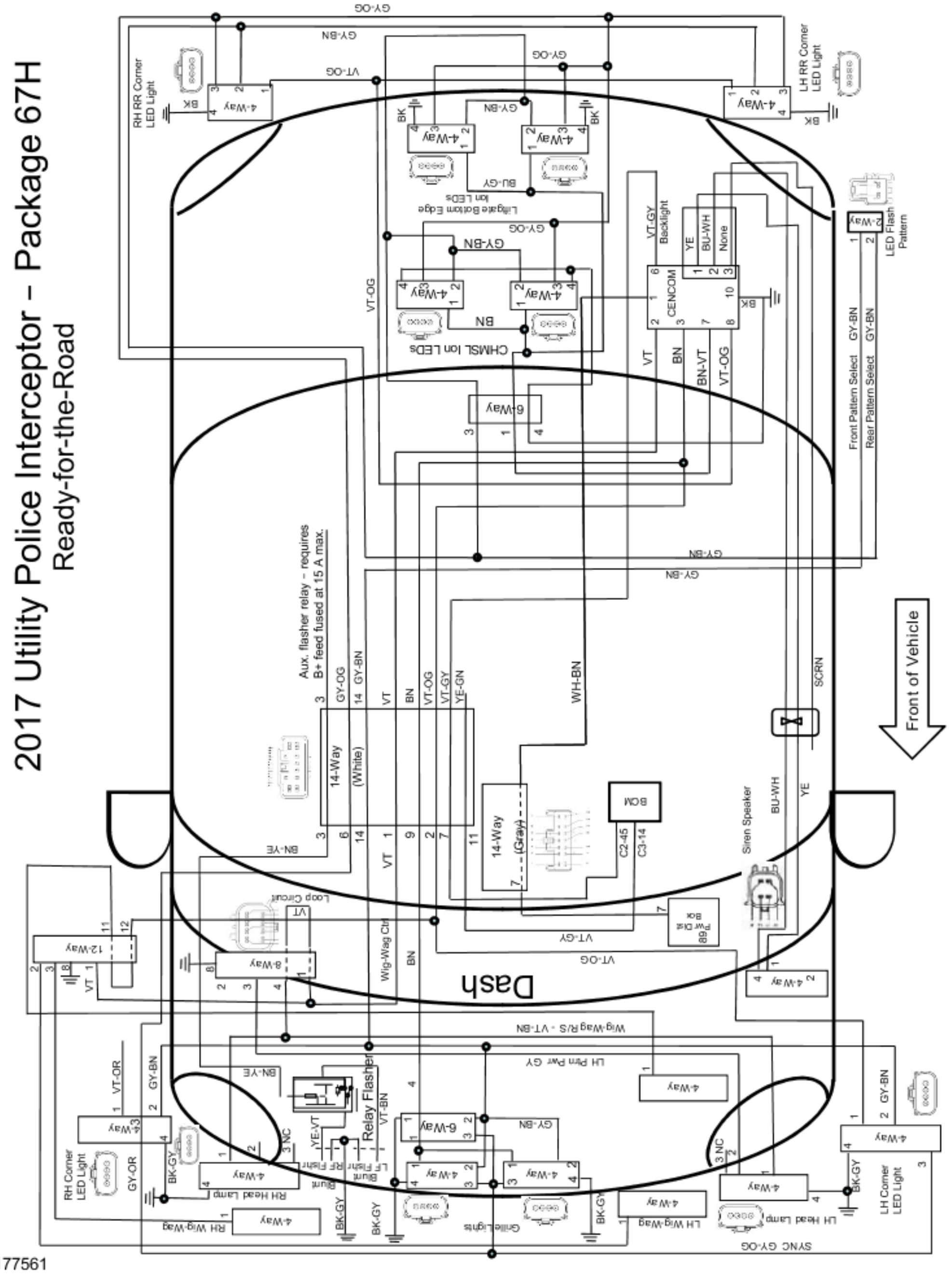
Visor LED Light - Rear Spoiler Traffic Advisor

(Stand-Alone Options)

RH Corner LED Light
4-Way
VT-OR
GY-OR
GY-BN
BK-GY
RH Wig-Wag
RH Head Lamp
3 NC
YE-VT
RF Flshr
LF Flshr
Blunt
Relay Flasher
VT-BN
Grille Lights
6-Way
LH Wig-Wag
LH Head Lamp
SYNC GY-OG
LH Corner LED Light
12-Way
8-Way
BN-YE
Loop Circuit
LH Pwr Pwr GY
Wig-Wag R/S - VT-BN
Dash
VT-OG
VT-GY
89 Pw Dist Box
C2-45
C3-14
BCM
Siren Speaker
BU-WH
YE
SCRN
Front of Vehicle
Front Traffic Advisor
1 Vbatt
4 Ground
2 Data
Aux. flshr relay - requires B+ feed fused at 15 A max.
14-Way (White)
Wig-Wag Ctrl
3
6 GY-OG
14 GY-BN
1 VT
5 GY-BU
10 BK-VT
9 BN
2 VT-OG
7 VT-GY
11 YE-GN
14-Way (Gray)
6-Way
Visor Cntrl Mod. B.O.B.
Data
WH-BN
10-Way
Rear Traffic Advisor
1 Vbatt
3 Ground
2 Data
CHMSL Ion LEDs
Liftgate Bottom Edge Ion LEDs
BU-GY
BN
GY-OG
GY-BN
BK
CENCOM
VT
BN
BN-VT
VT-OG
OG-YE
OG
VT-GY Backlight
YE
BU-WH
None
Front Pattern Select GY-BN
Rear Pattern Select GY-BN
2-Way
LED Flash Pattern
RH RR Corner LED Light
LH RR Corner LED Light

N0177560

Section 2: Electrical



2017 Utility Police Interceptor – Package 67H

Ready-for-the-Road

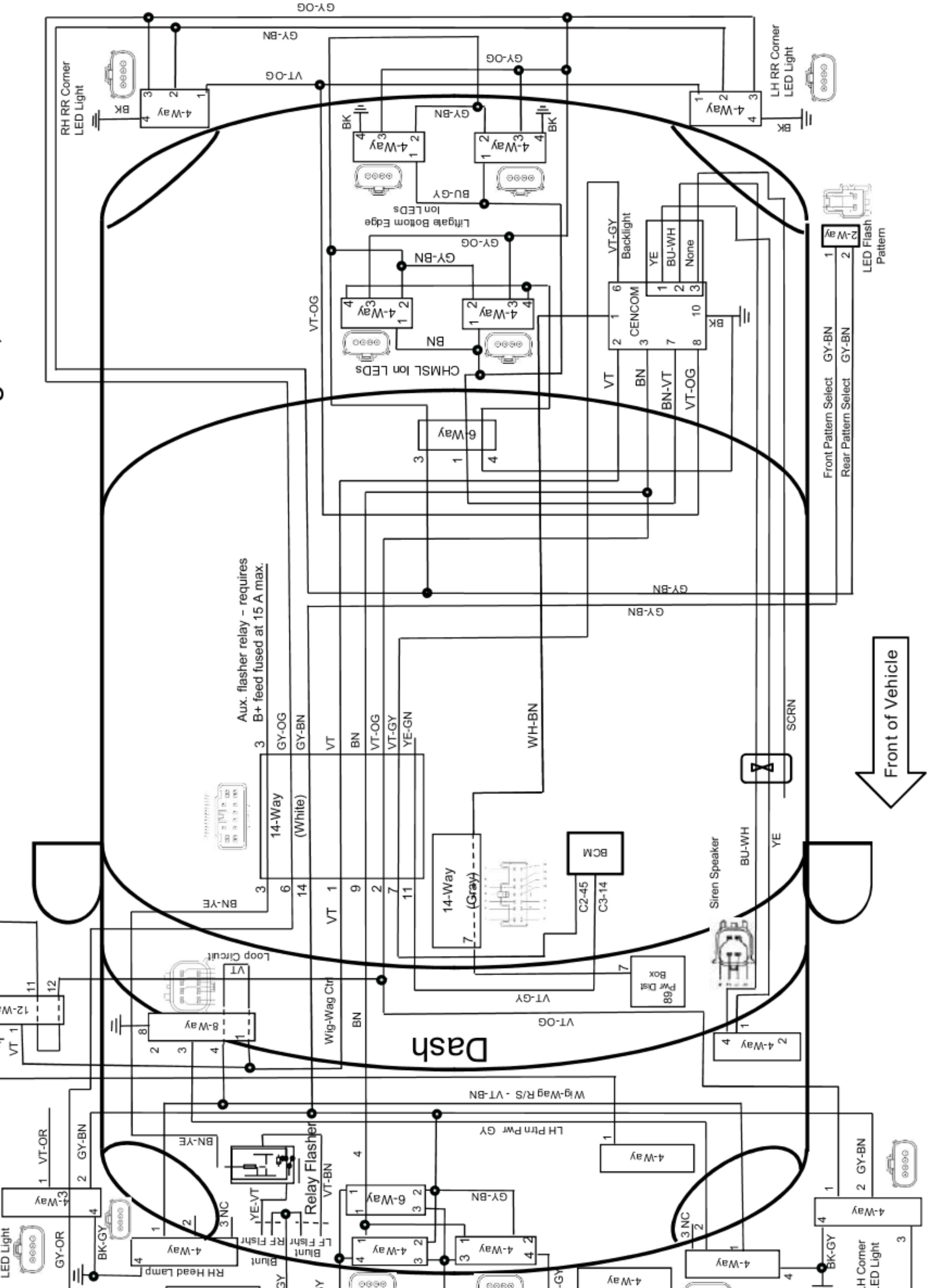
RH RR Corner LED Light
LH RR Corner LED Light
4-Way
BK
GY-OG
GY-BN
VT-OG
BU-GY
Liftgate Bottom Edge Ion LEDs
CHMSL Ion LEDs
BN
VT-GY
Backlight
YE
BU-WH
None
CENCOM
VT
BN-VT
6-Way
LED Flash Pattern
2-Way
Front Pattern Select
Rear Pattern Select
Aux. flasher relay - requires B+ feed fused at 15 A max.
14-Way (White)
GY-OG
YE-GN
WH-BN
SCRN
Front of Vehicle
14-Way (Gray)
BCM
C2-45
C3-14
Siren Speaker
Pwr Dist Box
BN-YE
Loop Circuit
12-Way
8-Way
Wig-Wag Ctrl
Dash
Wig-Wag R/S - VT-BN
LH Prm Pwr GY
Relay Flasher
VT-BN
YE-VT
LF Flshr
RF Flshr
Blunt
VT-OR
GY-OR
BK-GY
RH Corner LED Light
RH Head Lamp
RH Wig-Wag
Grille Lights
LH Head Lamp
LH Wig-Wag
LH Corner LED Light
SYNC GY-OG
NC

N0177561

Section 2: Electrical

2017 Utility Police Interceptor – Package 67U

Ultimate Wire Harness - No Lights, Siren or Controller



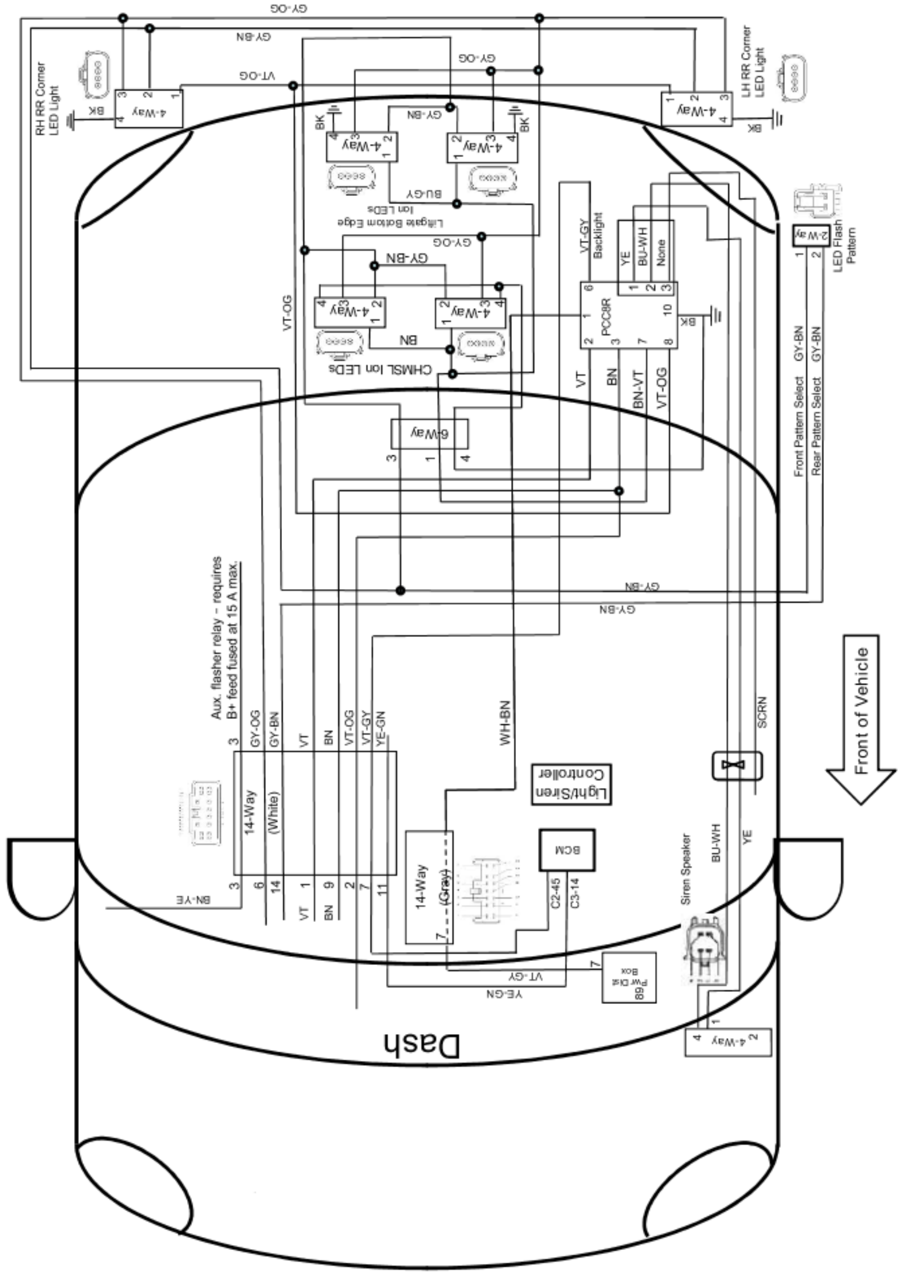
RH RR Corner LED Light
LH RR Corner LED Light
4-Way
BK
GY-OG
GY-BN
VT-OG
BU-GY
Liftgate Bottom Edge Ion LEDs
CHMSL Ion LEDs
BN
VT-GY
Backlight
YE
BU-WH
None
CENCOM
2-Way
LED Flash Pattern
Front Pattern Select GY-BN
Rear Pattern Select GY-BN
6-Way
VT
BN-VT
Aux. flasher relay - requires B+ feed fused at 15 A max.
14-Way (White)
GY-OG
GY-BN
YE-GN
WH-BN
SCRN
Front of Vehicle
14-Way (Gray)
BCM
C2-45
C3-14
Siren Speaker
BU-WH
BN-YE
Loop Circuit
12-Way
8-Way
Wig-Wag Ctrl
Relay Flasher
89 Pwr Dist Box
Dash
Wig-Wag R/S - VT-BN
LH Ptrn Pwr GY
VT-OR
GY-OR
BK-GY
RH Corner LED Light
LH Corner LED Light
YE-VT
VT-BN
NC
RF Flshr Blunt
LF Flshr Blunt
RH Head Lamp
LH Head Lamp
RH Wig-Wag
LH Wig-Wag
Grille Lights
SYNC GY-OG

N0177562

Section 2: Electrical

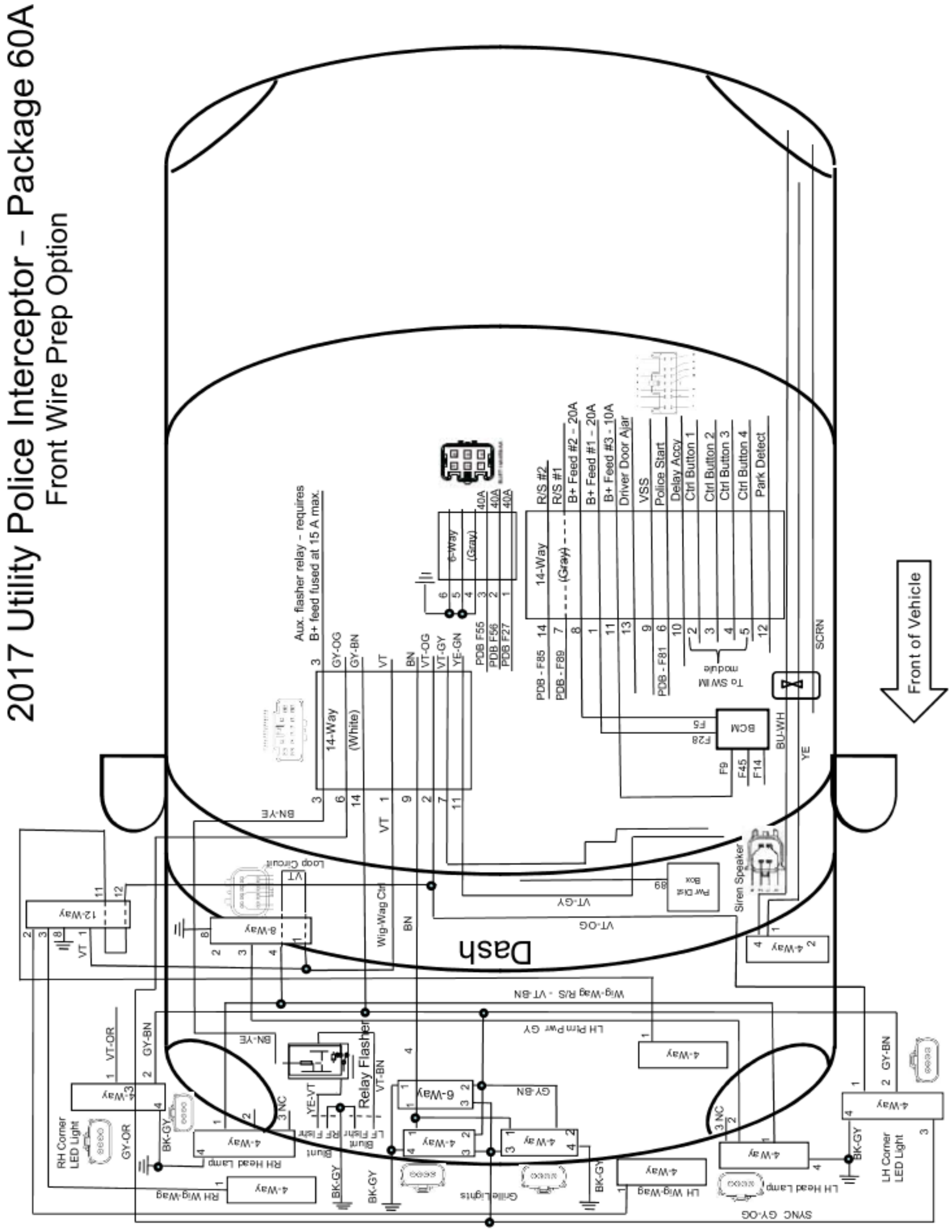
2017 Utility Police Interceptor Option 67G

Cargo Wiring Upfit Package


RH RR Corner LED Light
4-Way
BK
GY-OG
GY-BN
VT-OG
LH RR Corner LED Light
Liftgate Bottom Edge Ion LEDs
BU-GY
CHMSL Ion LEDs
BN
6-Way
PCC8R
VT-GY Backlight
YE
BU-WH
None
VT
BN-VT
LED Flash Pattern
2-Way
Front Pattern Select GY-BN
Rear Pattern Select GY-BN
Aux. flasher relay - requires B+ feed fused at 15 A max.
14-Way (White)
BN-YE
YE-GN
WH-BN
Light/Siren Controller
14-Way (Gray)
BCM
C2-45
C3-14
Pwr Dist Box 69
Siren Speaker
SCRN
Front of Vehicle
Dash

N0177565

Section 2: Electrical



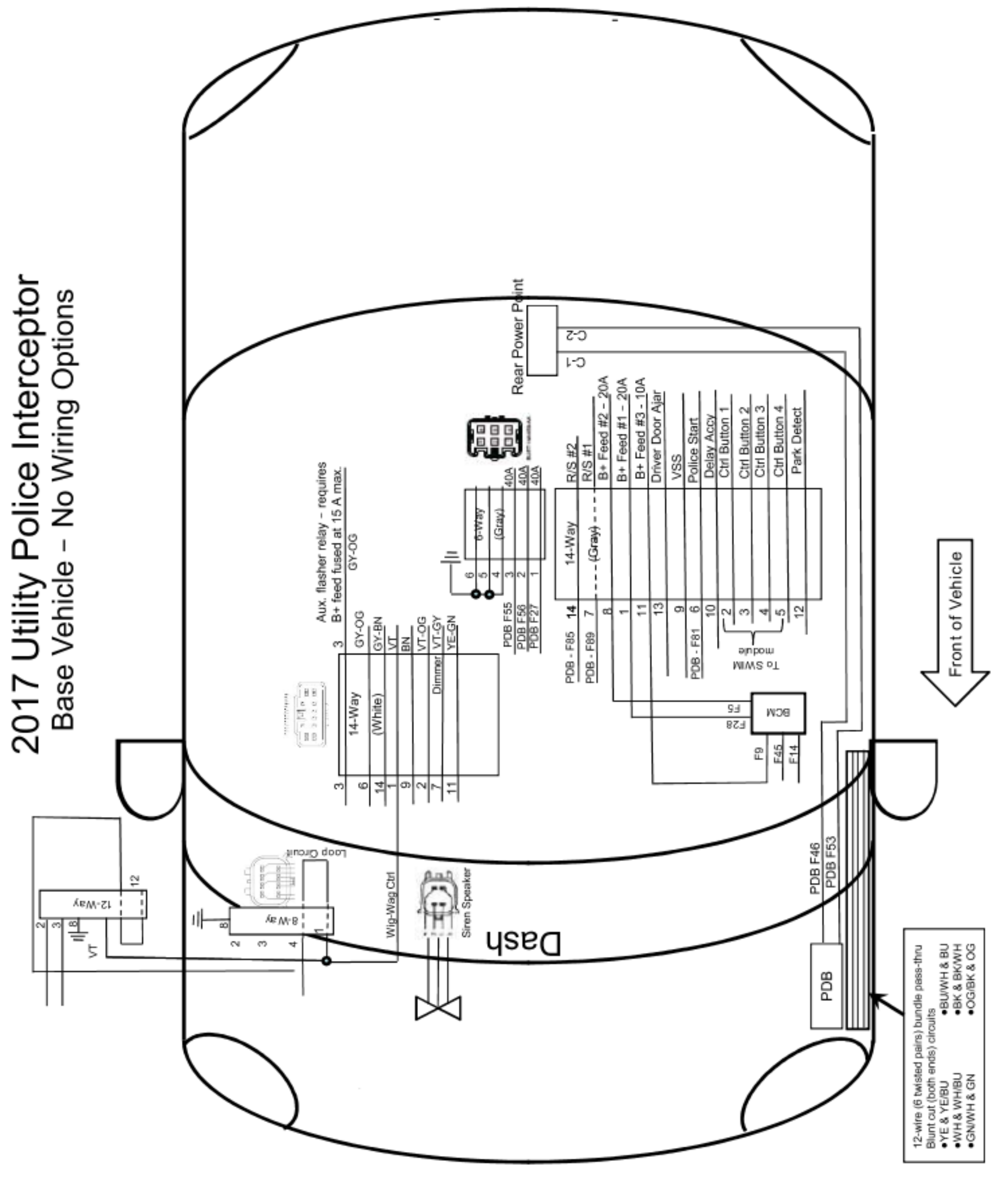
2017 Utility Police Interceptor – Package 60A

Front Wire Prep Option

Aux. flasher relay – requires B+ feed fused at 15 A max.
14-Way
(White)
6-Way
(Gray)
14-Way
(Gray)
GY-OG
GY-BN
VT
BN
VT-OG
VT-GY
YE-GN
PDB F55
PDB F56
PDB F27
40A
40A
40A
R/S #2
R/S #1
B+ Feed #2 - 20A
B+ Feed #1 - 20A
B+ Feed #3 - 10A
Driver Door Ajar
VSS
Police Start
Delay Accy
Ctrl Button 1
Ctrl Button 2
Ctrl Button 3
Ctrl Button 4
Park Detect
PDB - F85
PDB - F89
PDB - F81
To SWIM module
BCM
F5
F28
F9
F45
F14
BU-WH
YE
SCRN
Front of Vehicle
BN-YE
Loop Circuit
VT
12-Way
8-Way
Wig-Wag Ctrl
BN
Dash
VT-GY
VT-OG
Pwr Dist Box
Siren Speaker
4-Way
Wig-Wag R/S - VT-BN
LH Prm Pwr GY
BN-YE
Relay Flasher
VT-BN
YE-VT
6-Way
GY-BN
LF Flshr Blunt
RF Flshr Blunt
VT-OR
GY-BN
RH Corner LED Light
GY-OR
BK-GY
RH Head Lamp
RH Wig-Wag
Grille Lights
LH Wig-Wag
LH Head Lamp
LH Corner LED Light
SYNC GY-OG
NC

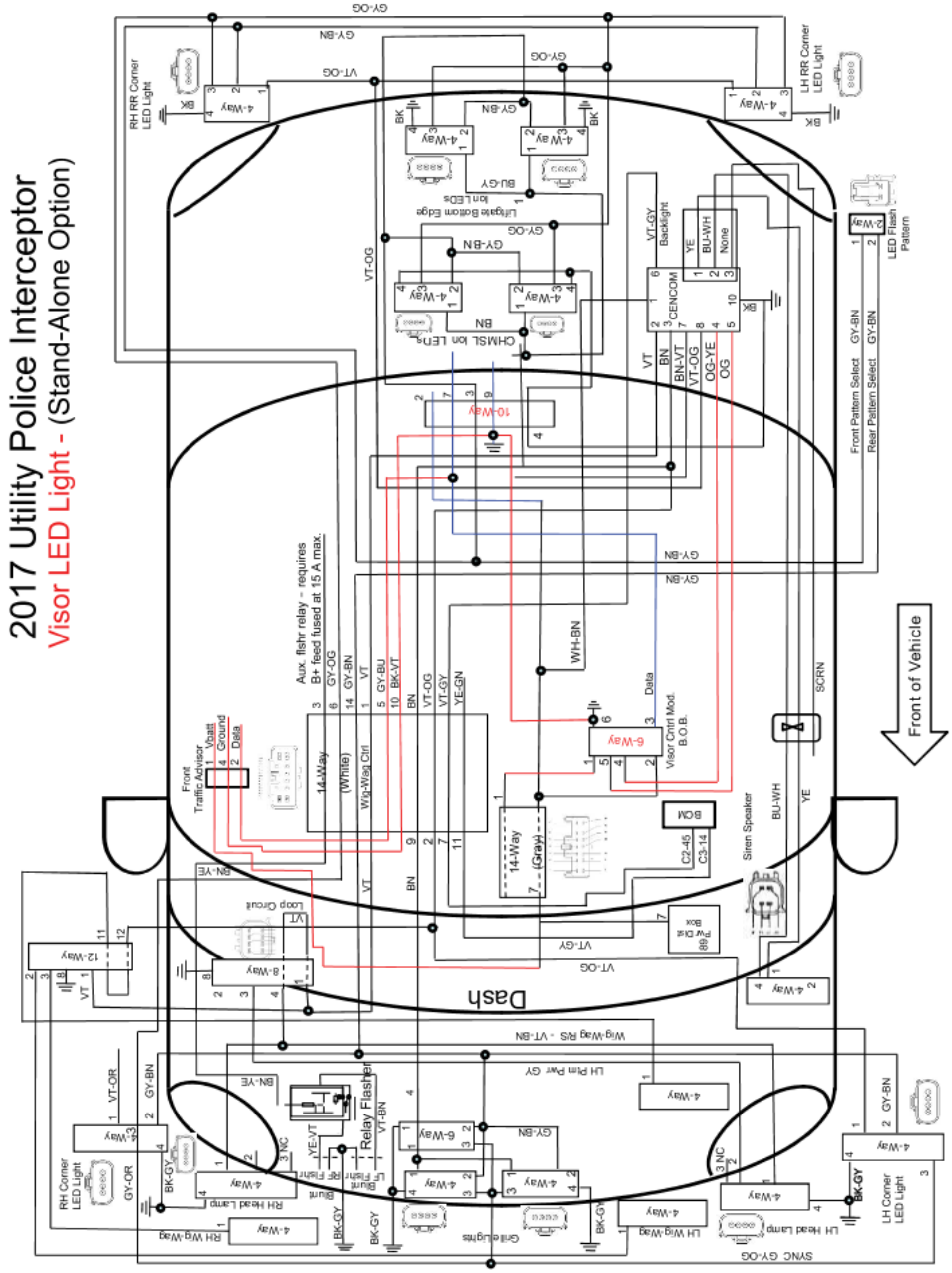
N0177566

Section 2: Electrical


2017 Utility Police Interceptor
Base Vehicle – No Wiring Options
Aux. flasher relay - requires
B+ feed fused at 15 A max.
GY-OG
14-Way
(White)
3 GY-OG
6 GY-BN
14 VT
1 BN
9 VT-OG
2 VT-GY
7 Dimmer
11 YE-GN
6-Way
(Gray)
PDB F55 3 40A
PDB F56 2 40A
PDB F27 1 40A
14-Way
(Gray)
PDB - F85 14 R/S #2
PDB - F89 7 R/S #1
8 B+ Feed #2 - 20A
1 B+ Feed #1 - 20A
11 B+ Feed #3 - 10A
13 Driver Door Ajar
9 VSS
PDB - F81 6 Police Start
10 Delay Accy
2 Ctrl Button 1
3 Ctrl Button 2
4 Ctrl Button 3
5 Ctrl Button 4
12 Park Detect
To SWIM module
Rear Power Point
C-1
C-2
BCM
F5
F28
F9
F45
F14
Front of Vehicle
PDB F46
PDB F53
PDB
12-wire (6 twisted pairs) bundle pass-thru
Blunt cut (both ends) circuits
●YE & YE/BU ●BU/WH & BU
●WH & WH/BU ●BK & BK/WH
●GN/WH & GN ●OG/BK & OG
Dash
Siren Speaker
Wig-Wag Ctrl
Loop Circuit
8-Way
8
1
2
3
4
12-Way
12
2
3
8
VT

N0177567

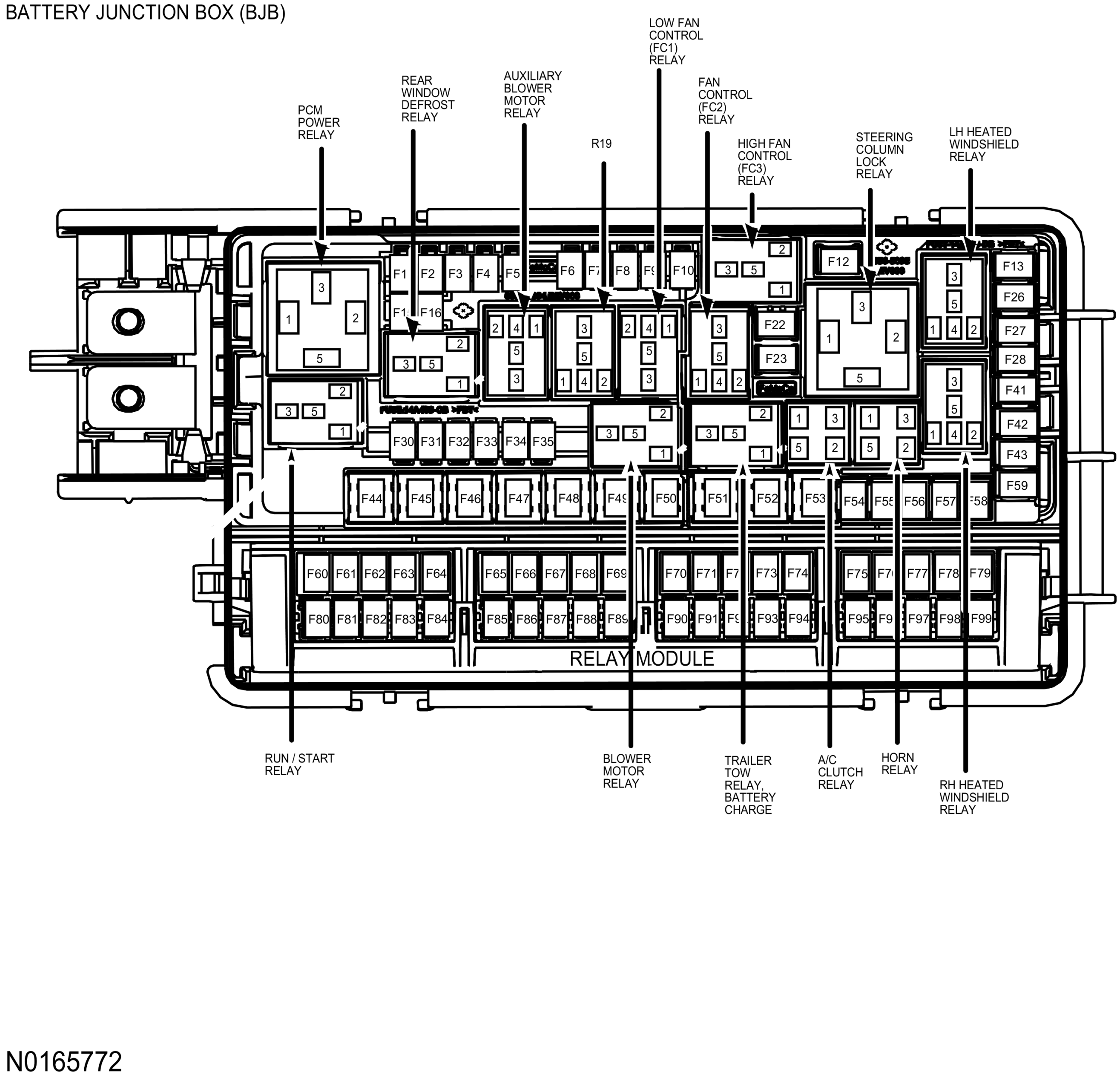
Section 2: Electrical


2017 Utility Police Interceptor
Visor LED Light - (Stand-Alone Option)
Front of Vehicle
Dash
RH RR Corner LED Light
LH RR Corner LED Light
Liftgate Bottom Edge Ion LEDs
CHMSL Ion LEDs
CENCOM
Backlight
LED Flash Pattern
Front Pattern Select
Rear Pattern Select
10-Way
6-Way
Visor Cntrl Mod. B.O.B.
14-Way (White)
Wig-Wag Ctrl
14-Way (Gray)
Aux. flshr relay – requires B+ feed fused at 15 A max.
Front Traffic Advisor
Vbatt
Ground
Data
BCM
Siren Speaker
Pwr Dist Box
Loop Circuit
12-Way
8-Way
Relay Flasher
RH Corner LED Light
LH Corner LED Light
RH Head Lamp
LH Head Lamp
RH Wig-Wag
LH Wig-Wag
Grille Lights
LH Ptm Pwr GY
Wig-Wag RS - VT-BN
SYNC GY-OG
SCRN
GY-OG
GY-BN
VT-OG
BU-GY
BK
BN
VT-GY
WH-BN
YE
BU-WH
None
BN-YE
BK-GY
GY-OR
VT-OR
YE-VT
VT-BN
Blunt
RF Flshr
LF Flshr
4-Way
2-Way

N0177568

Section 2: Electrical

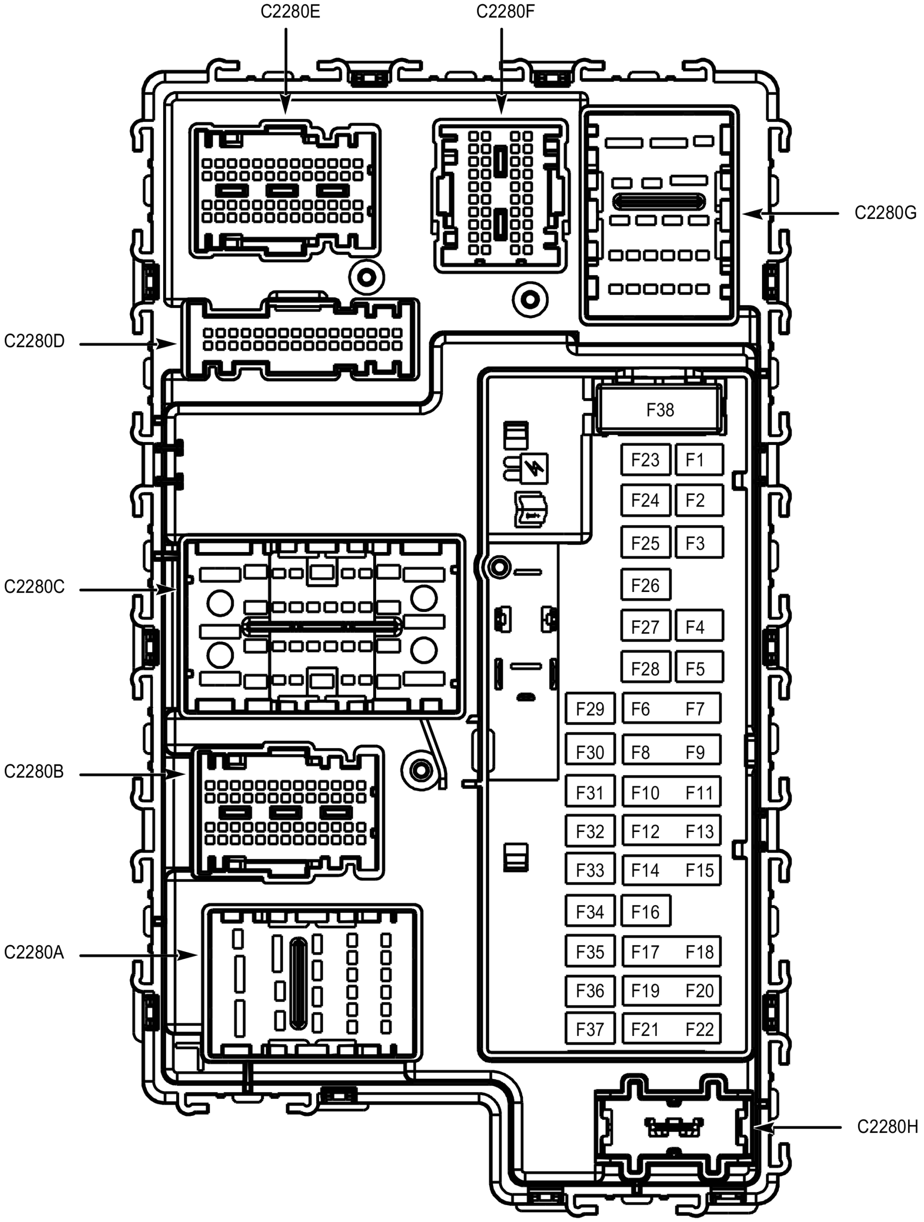
Battery Junction Box (BJB)


BATTERY JUNCTION BOX (BJB)
PCM POWER RELAY
REAR WINDOW DEFROST RELAY
AUXILIARY BLOWER MOTOR RELAY
R19
LOW FAN CONTROL (FC1) RELAY
FAN CONTROL (FC2) RELAY
HIGH FAN CONTROL (FC3) RELAY
STEERING COLUMN LOCK RELAY
LH HEATED WINDSHIELD RELAY
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F12 F13 F15 F16
F22 F23 F26 F27 F28 F41 F42 F43 F59
F30 F31 F32 F33 F34 F35
F44 F45 F46 F47 F48 F49 F50 F51 F52 F53 F54 F55 F56 F57 F58
F60 F61 F62 F63 F64 F65 F66 F67 F68 F69 F70 F71 F72 F73 F74 F75 F76 F77 F78 F79
F80 F81 F82 F83 F84 F85 F86 F87 F88 F89 F90 F91 F92 F93 F94 F95 F96 F97 F98 F99
RELAY MODULE
RUN / START RELAY
BLOWER MOTOR RELAY
TRAILER TOW RELAY, BATTERY CHARGE
A/C CLUTCH RELAY
HORN RELAY
RH HEATED WINDSHIELD RELAY
N0165772

Body Control Module (BCM)

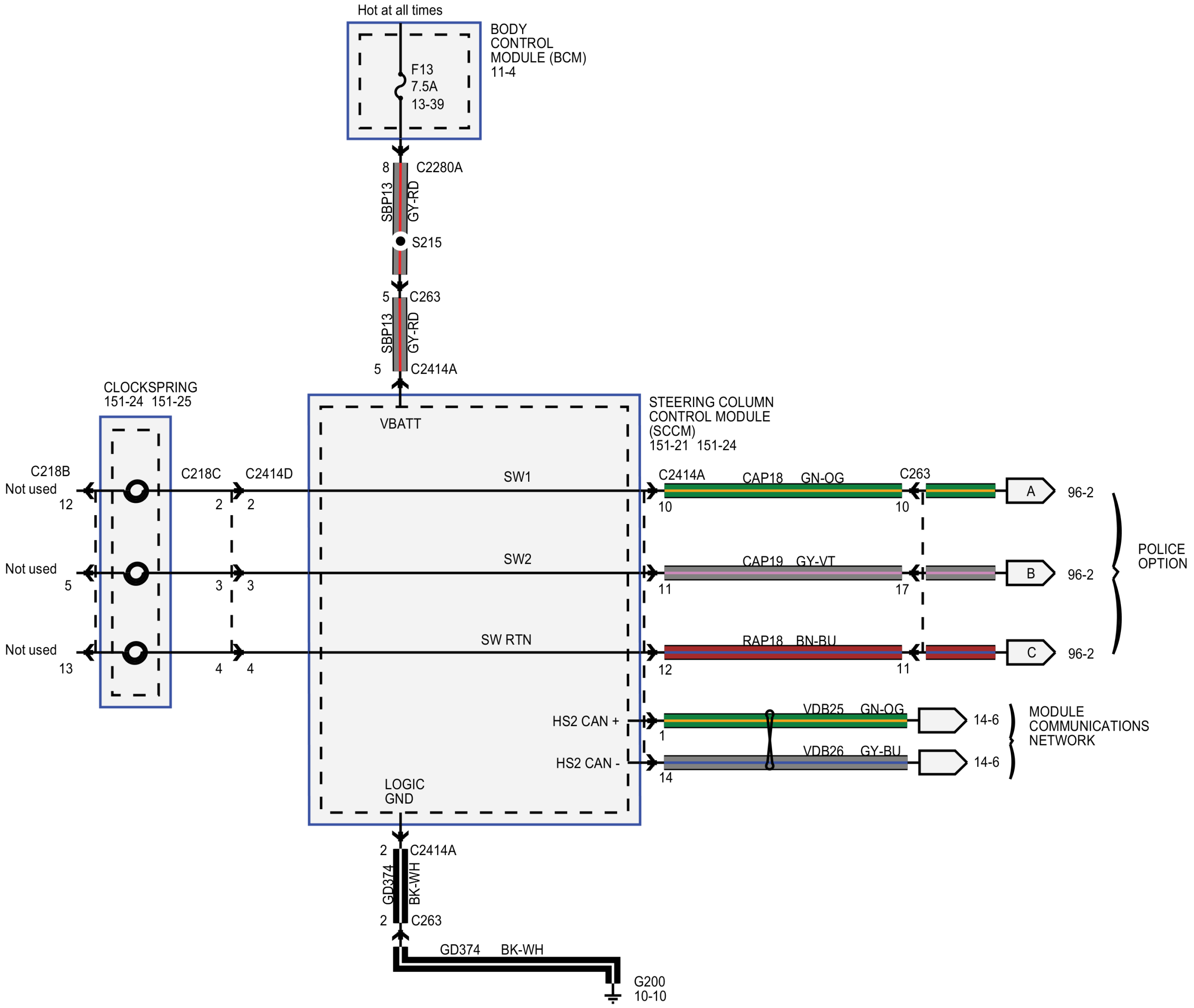
Section 2: Electrical

BODY CONTROL MODULE (BCM)


C2280E
C2280F
C2280G
C2280D
C2280C
C2280B
C2280A
C2280H
F38
F23
F1
F24
F2
F25
F3
F26
F27
F4
F28
F5
F29
F6
F7
F30
F8
F9
F31
F10
F11
F32
F12
F13
F33
F14
F15
F34
F16
F35
F17
F18
F36
F19
F20
F37
F21
F22

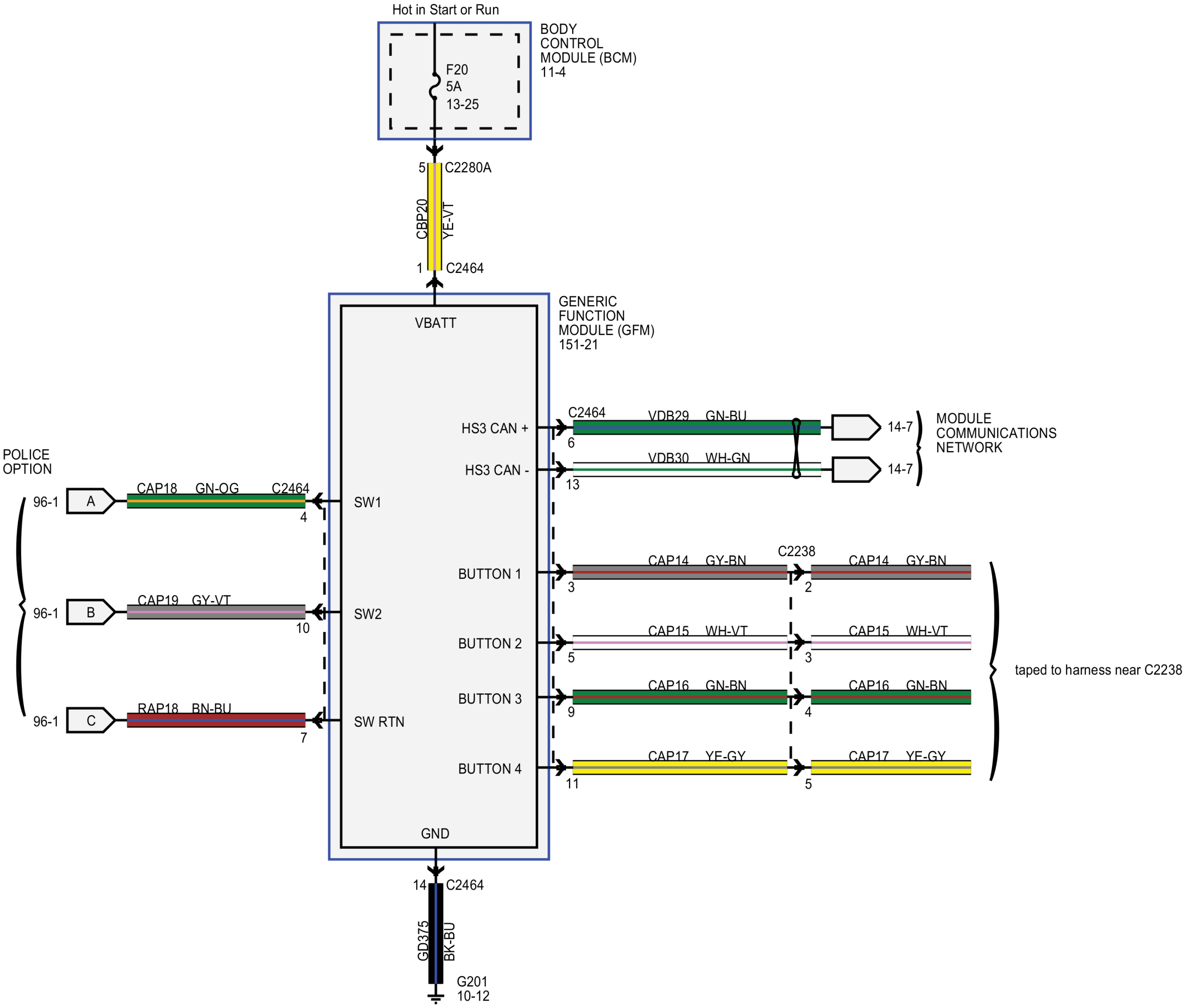
N0165773

Section 2: Electrical


Hot at all times
BODY CONTROL MODULE (BCM) 11-4
F13 7.5A 13-39
8 C2280A
SBP13 GY-RD
S215
5 C263
SBP13 GY-RD
5 C2414A
VBATT
STEERING COLUMN CONTROL MODULE (SCCM) 151-21 151-24
CLOCKSPRING 151-24 151-25
C218B
Not used 12
Not used 5
Not used 13
C218C
C2414D
2 2
3 3
4 4
SW1
SW2
SW RTN
C2414A
CAP18 GN-OG
C263
10 10
A 96-2
CAP19 GY-VT
11 17
B 96-2
RAP18 BN-BU
12 11
C 96-2
POLICE OPTION
HS2 CAN +
VDB25 GN-OG
1
14-6
HS2 CAN -
VDB26 GY-BU
14
14-6
MODULE COMMUNICATIONS NETWORK
LOGIC GND
2 C2414A
GD374 BK-WH
2 C263
GD374 BK-WH
G200 10-10

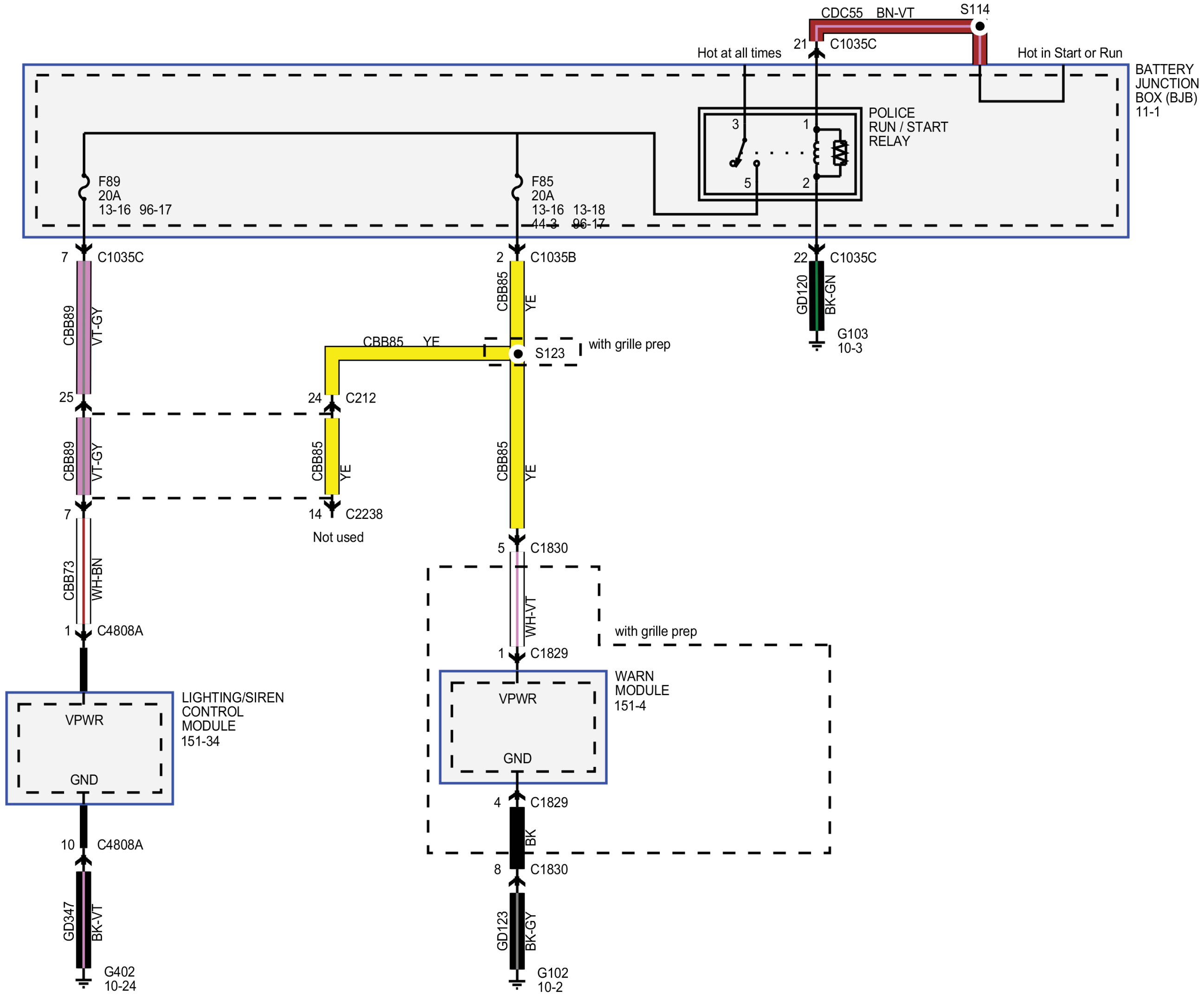
N0165619

Section 2: Electrical


Hot in Start or Run
BODY CONTROL MODULE (BCM) 11-4
F20
5A
13-25
5
C2280A
CBP20
YE-VT
1
C2464
GENERIC FUNCTION MODULE (GFM) 151-21
VBATT
HS3 CAN +
HS3 CAN -
C2464
VDB29 GN-BU
6
VDB30 WH-GN
13
14-7
14-7
MODULE COMMUNICATIONS NETWORK
POLICE OPTION
96-1
A
CAP18 GN-OG
C2464
4
SW1
96-1
B
CAP19 GY-VT
10
SW2
96-1
C
RAP18 BN-BU
7
SW RTN
BUTTON 1
CAP14 GY-BN
C2238
CAP14 GY-BN
3
2
BUTTON 2
CAP15 WH-VT
CAP15 WH-VT
5
3
BUTTON 3
CAP16 GN-BN
CAP16 GN-BN
9
4
BUTTON 4
CAP17 YE-GY
CAP17 YE-GY
11
5
taped to harness near C2238
GND
14
C2464
GD375
BK-BU
G201
10-12

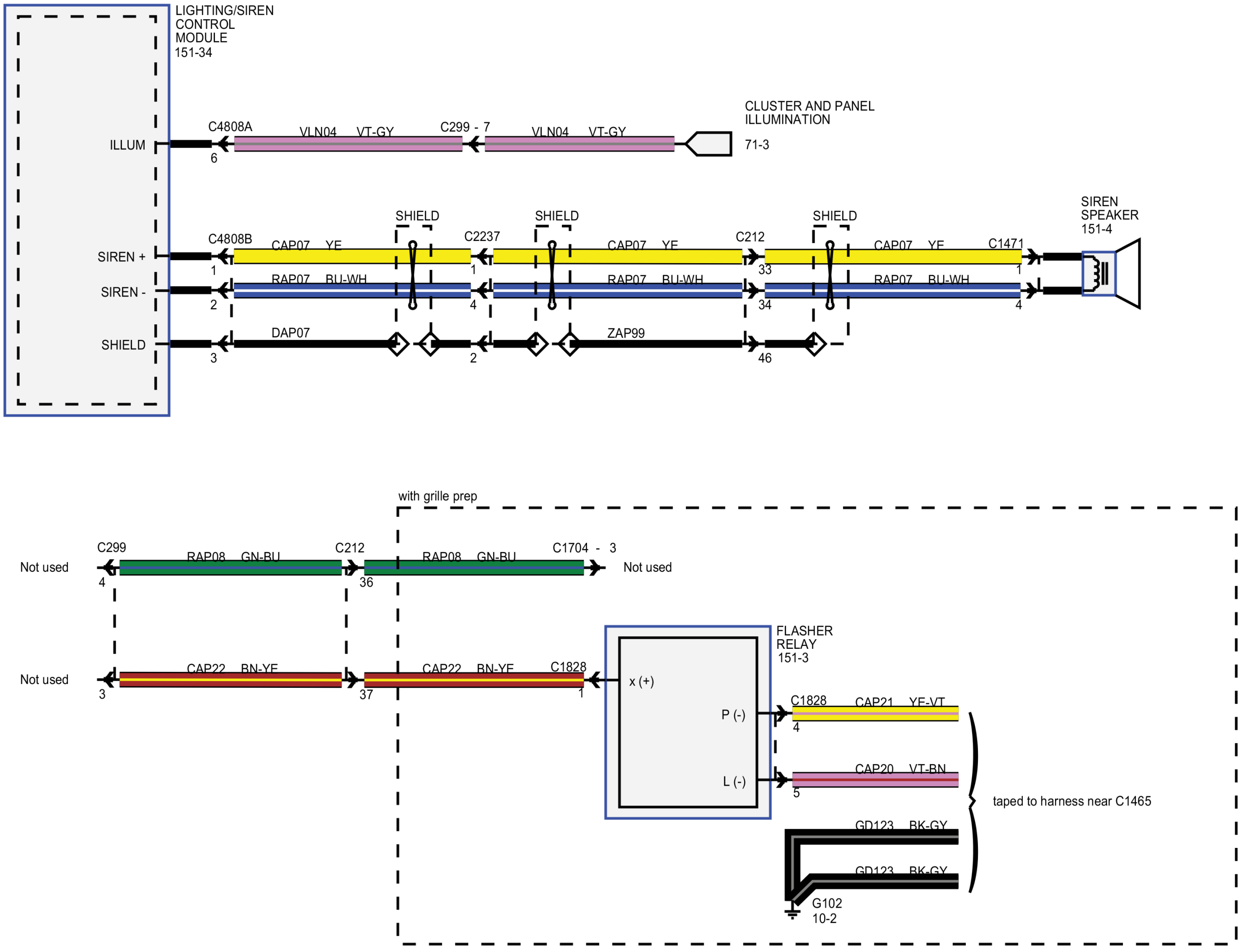
N0165618

Section 2: Electrical


CDC55 BN-VT
S114
21
C1035C
Hot at all times
Hot in Start or Run
BATTERY JUNCTION BOX (BJB) 11-1
POLICE RUN / START RELAY
3
1
5
2
F89
20A
13-16 96-17
F85
20A
13-16 13-18
~~44-3~~ ~~96-17~~
7
C1035C
2
C1035B
22
C1035C
CBB89
VT-GY
CBB85
YE
GD120
BK-GN
G103
10-3
CBB85 YE
S123
with grille prep
25
24
C212
CBB89
VT-GY
CBB85
YE
CBB85
YE
7
14
C2238
Not used
5
C1830
CBB73
WH-BN
WH-VT
with grille prep
1
C4808A
1
C1829
LIGHTING/SIREN CONTROL MODULE 151-34
VPWR
GND
WARN MODULE 151-4
VPWR
GND
4
C1829
BK
10
C4808A
8
C1830
GD347
BK-VT
GD123
BK-GY
G402
10-24
G102
10-2

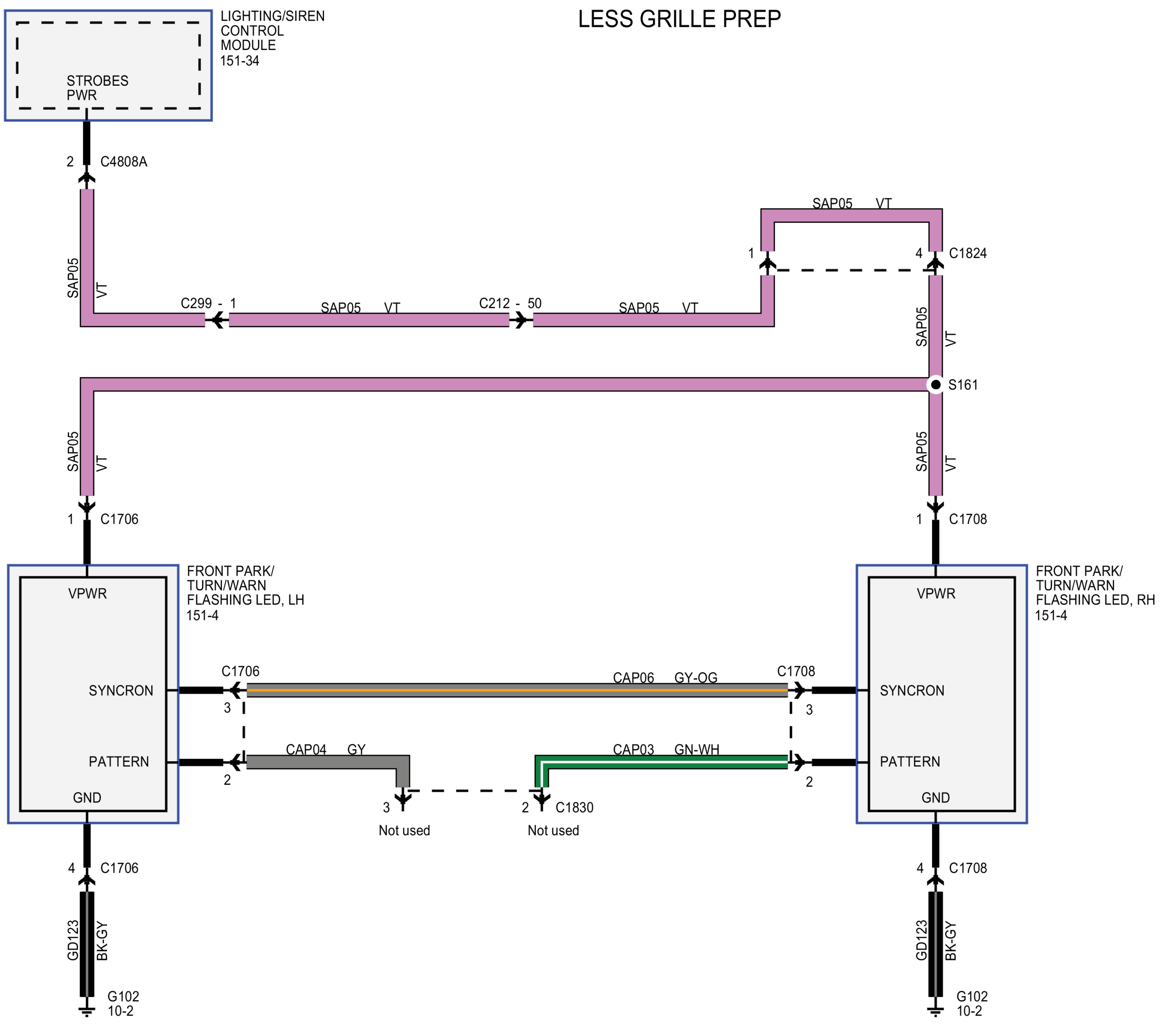
N0165617

Section 2: Electrical


LIGHTING/SIREN CONTROL MODULE
151-34
ILLUM
C4808A
6
VLN04 VT-GY
C299 - 7
VLN04 VT-GY
CLUSTER AND PANEL ILLUMINATION
71-3
SIREN +
SIREN -
SHIELD
C4808B
1
2
3
CAP07 YE
RAP07 BU-WH
DAP07
SHIELD
C2237
1
4
2
CAP07 YE
RAP07 BU-WH
ZAP99
SHIELD
C212
33
34
46
CAP07 YE
RAP07 BU-WH
SHIELD
C1471
1
4
SIREN SPEAKER
151-4
with grille prep
Not used
C299
4
RAP08 GN-BU
C212
36
RAP08 GN-BU
C1704 - 3
Not used
Not used
3
CAP22 BN-YE
37
CAP22 BN-YE
C1828
1
x (+)
FLASHER RELAY
151-3
P (-)
L (-)
C1828
4
CAP21 YE-VT
5
CAP20 VT-BN
GD123 BK-GY
GD123 BK-GY
G102
10-2
taped to harness near C1465

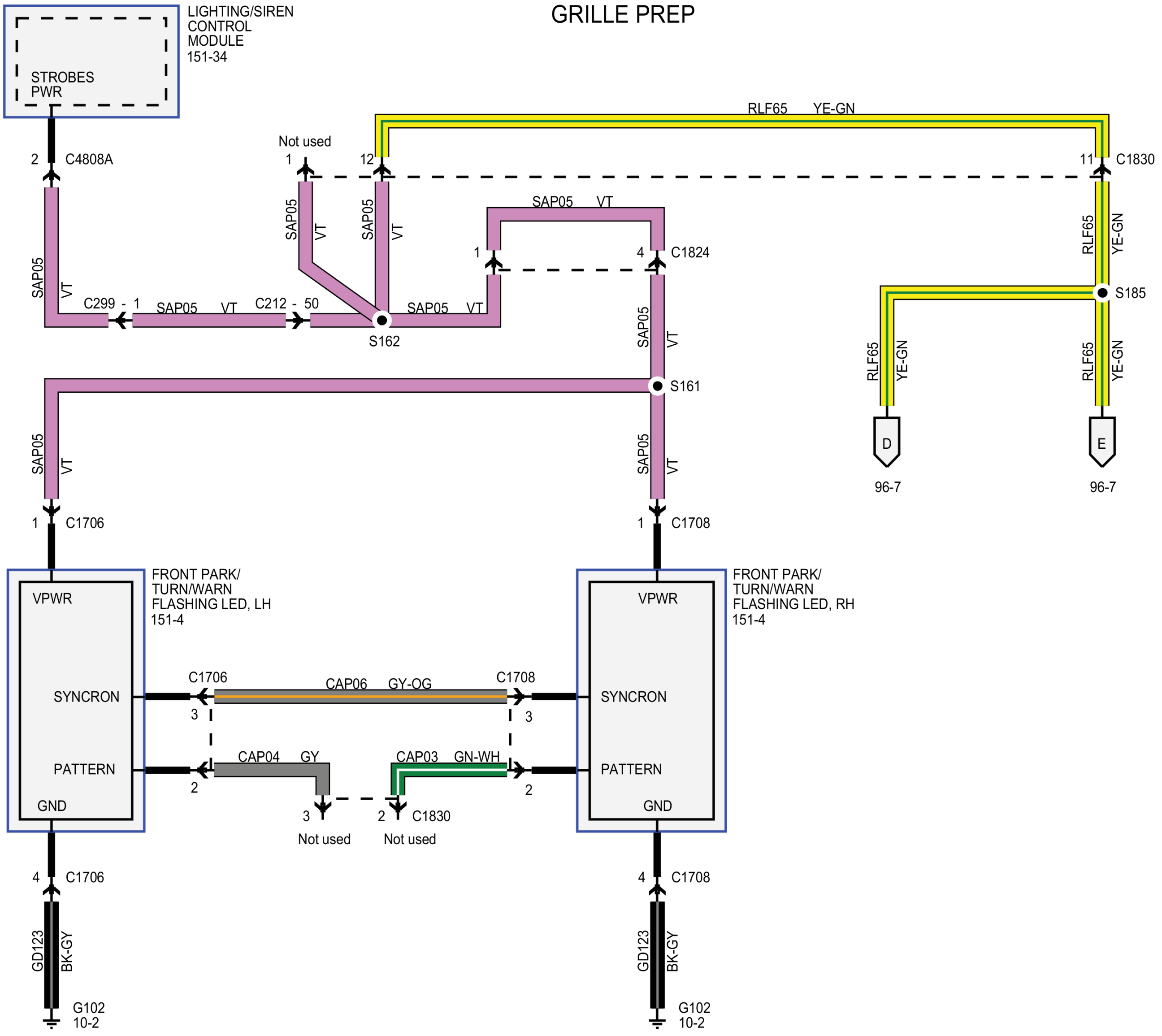
N0165616

Section 2: Electrical


LESS GRILLE PREP
LIGHTING/SIREN CONTROL MODULE 151-34
STROBES PWR
2 C4808A
SAP05 VT
C299 - 1
C212 - 50
1 4 C1824
S161
1 C1706
1 C1708
FRONT PARK/ TURN/WARN FLASHING LED, LH 151-4
FRONT PARK/ TURN/WARN FLASHING LED, RH 151-4
VPWR
SYNCRON
PATTERN
GND
CAP06 GY-OG
CAP04 GY
CAP03 GN-WH
C1706 3
C1708 3
2
3 Not used
2 C1830 Not used
4 C1706
4 C1708
GD123 BK-GY
G102 10-2

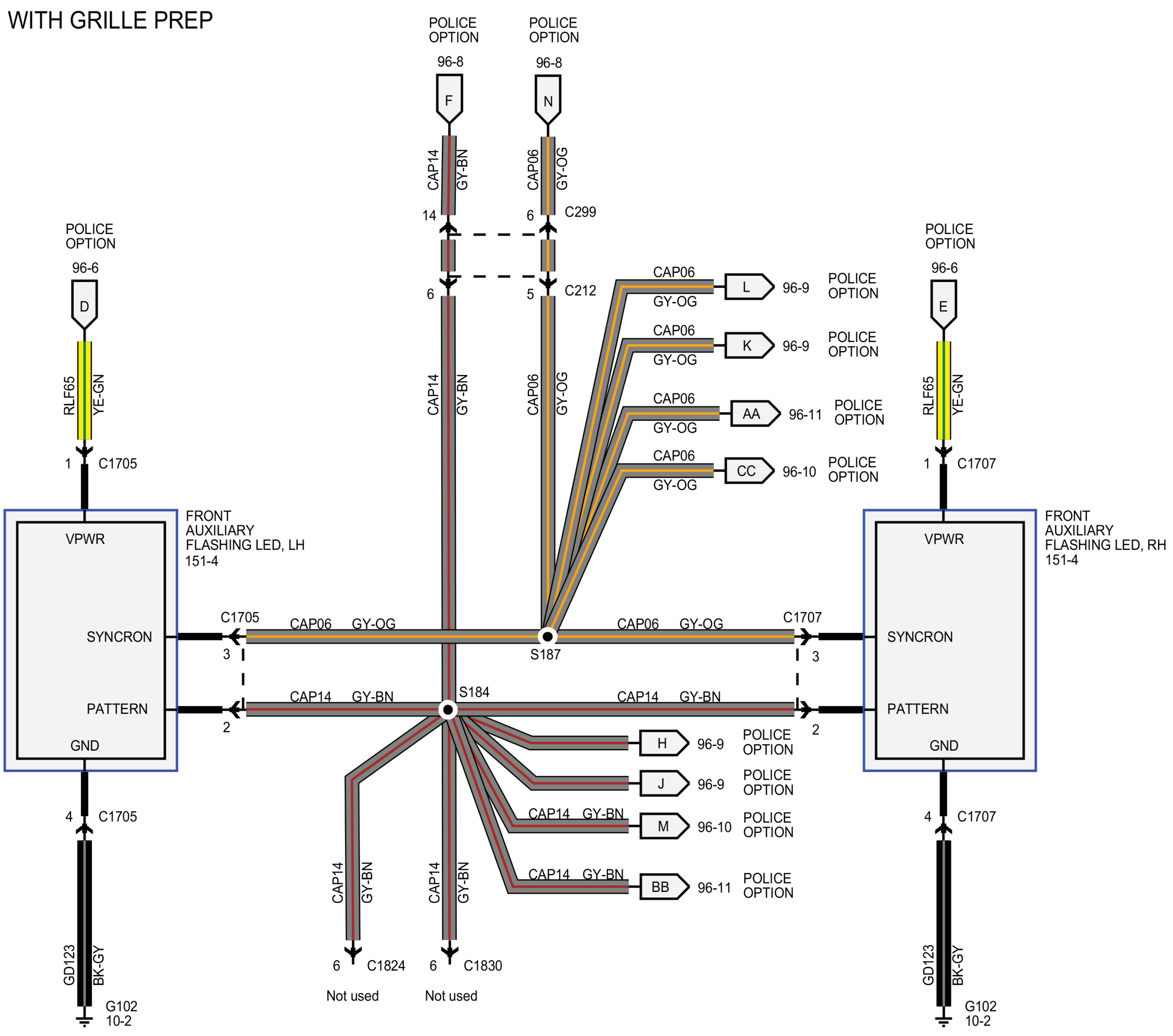
N0165615

Section 2: Electrical


GRILLE PREP
LIGHTING/SIREN CONTROL MODULE 151-34
STROBES PWR
2 C4808A
SAP05 VT
C299 - 1
C212 - 50
S162
Not used
1
12
RLF65 YE-GN
11 C1830
1 4 C1824
S161
S185
D 96-7
E 96-7
1 C1706
1 C1708
FRONT PARK/ TURN/WARN FLASHING LED, LH 151-4
FRONT PARK/ TURN/WARN FLASHING LED, RH 151-4
VPWR
SYNCRON
PATTERN
GND
CAP06 GY-OG
CAP04 GY
CAP03 GN-WH
3
2
3 2 C1830
Not used
Not used
4 C1706
4 C1708
GD123 BK-GY
G102 10-2

N0165614

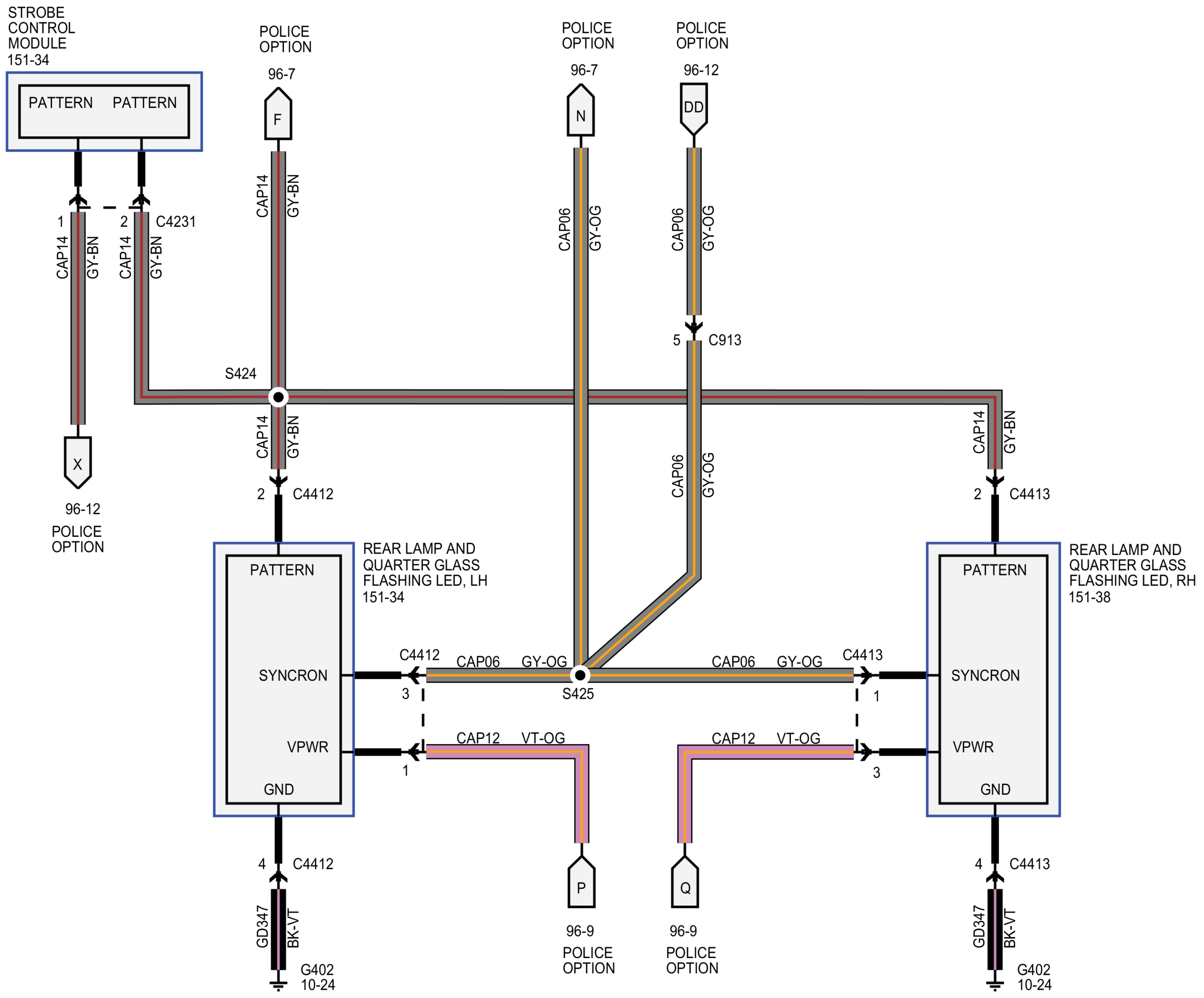
Section 2: Electrical


WITH GRILLE PREP
POLICE OPTION
96-8
F
CAP14
GY-BN
14
POLICE OPTION
96-8
N
CAP06
GY-OG
6
C299
6
5
C212
CAP06
GY-OG
L
96-9
POLICE OPTION
CAP06
GY-OG
K
96-9
POLICE OPTION
CAP06
GY-OG
AA
96-11
POLICE OPTION
CAP06
GY-OG
CC
96-10
POLICE OPTION
POLICE OPTION
96-6
D
RLF65
YE-GN
1
C1705
POLICE OPTION
96-6
E
RLF65
YE-GN
1
C1707
VPWR
SYNCRON
PATTERN
GND
FRONT AUXILIARY FLASHING LED, LH
151-4
FRONT AUXILIARY FLASHING LED, RH
151-4
C1705
3
CAP06
GY-OG
S187
C1707
3
2
CAP14
GY-BN
S184
2
H
96-9
POLICE OPTION
J
96-9
POLICE OPTION
CAP14
GY-BN
M
96-10
POLICE OPTION
CAP14
GY-BN
BB
96-11
POLICE OPTION
4
C1705
4
C1707
GD123
BK-GY
G102
10-2
6
C1824
Not used
6
C1830
Not used

N0165613

Section 2: Electrical

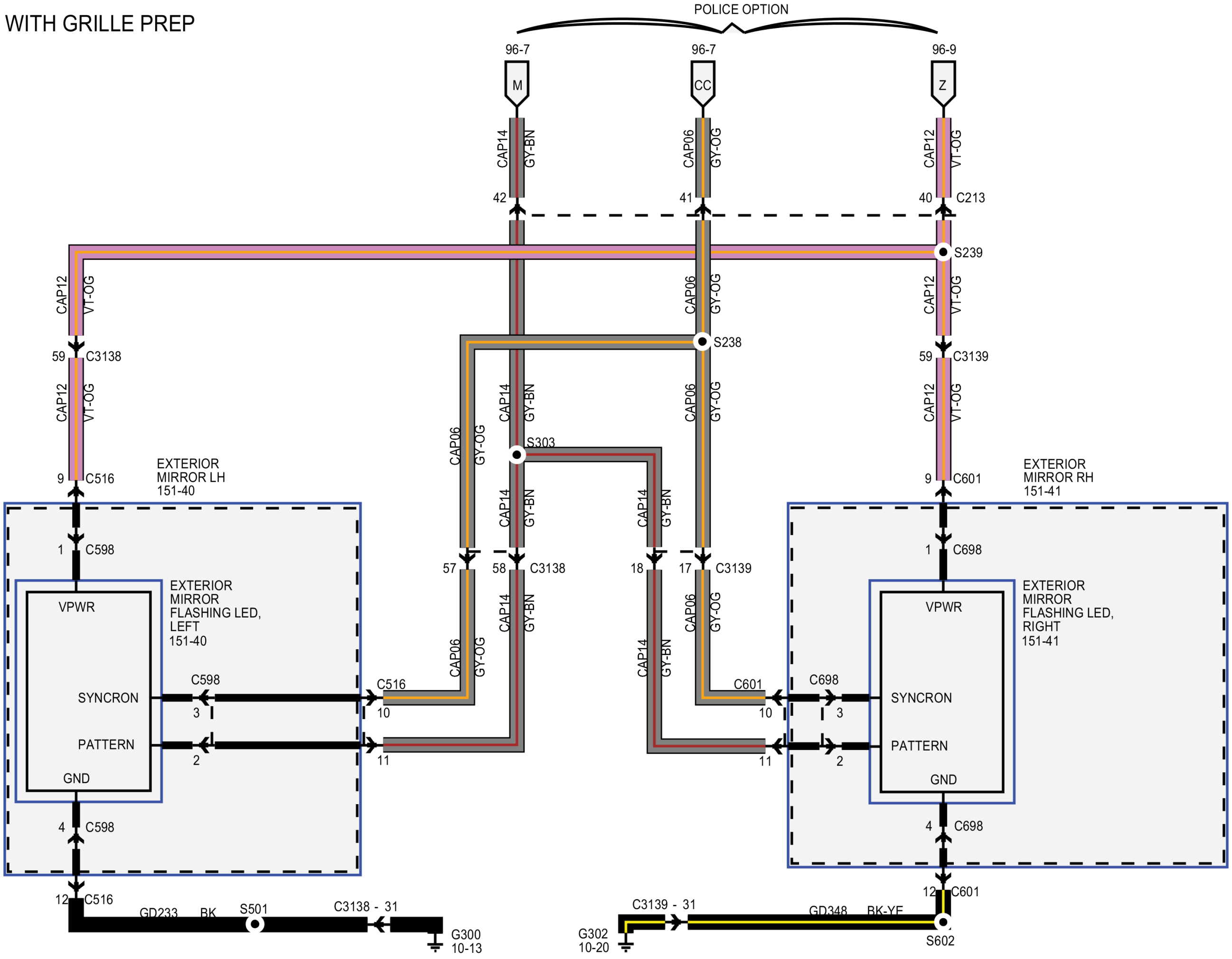
WITH GRILLE PREP


STROBE CONTROL MODULE 151-34
PATTERN
PATTERN
1
2
C4231
CAP14
GY-BN
X
96-12
POLICE OPTION
POLICE OPTION
96-7
F
POLICE OPTION
96-7
N
POLICE OPTION
96-12
DD
CAP06
GY-OG
5
C913
S424
2
C4412
C4413
REAR LAMP AND QUARTER GLASS FLASHING LED, LH 151-34
REAR LAMP AND QUARTER GLASS FLASHING LED, RH 151-38
SYNCRON
VPWR
GND
3
1
4
S425
CAP12
VT-OG
P
Q
96-9
POLICE OPTION
GD347
BK-VT
G402
10-24

N0165612

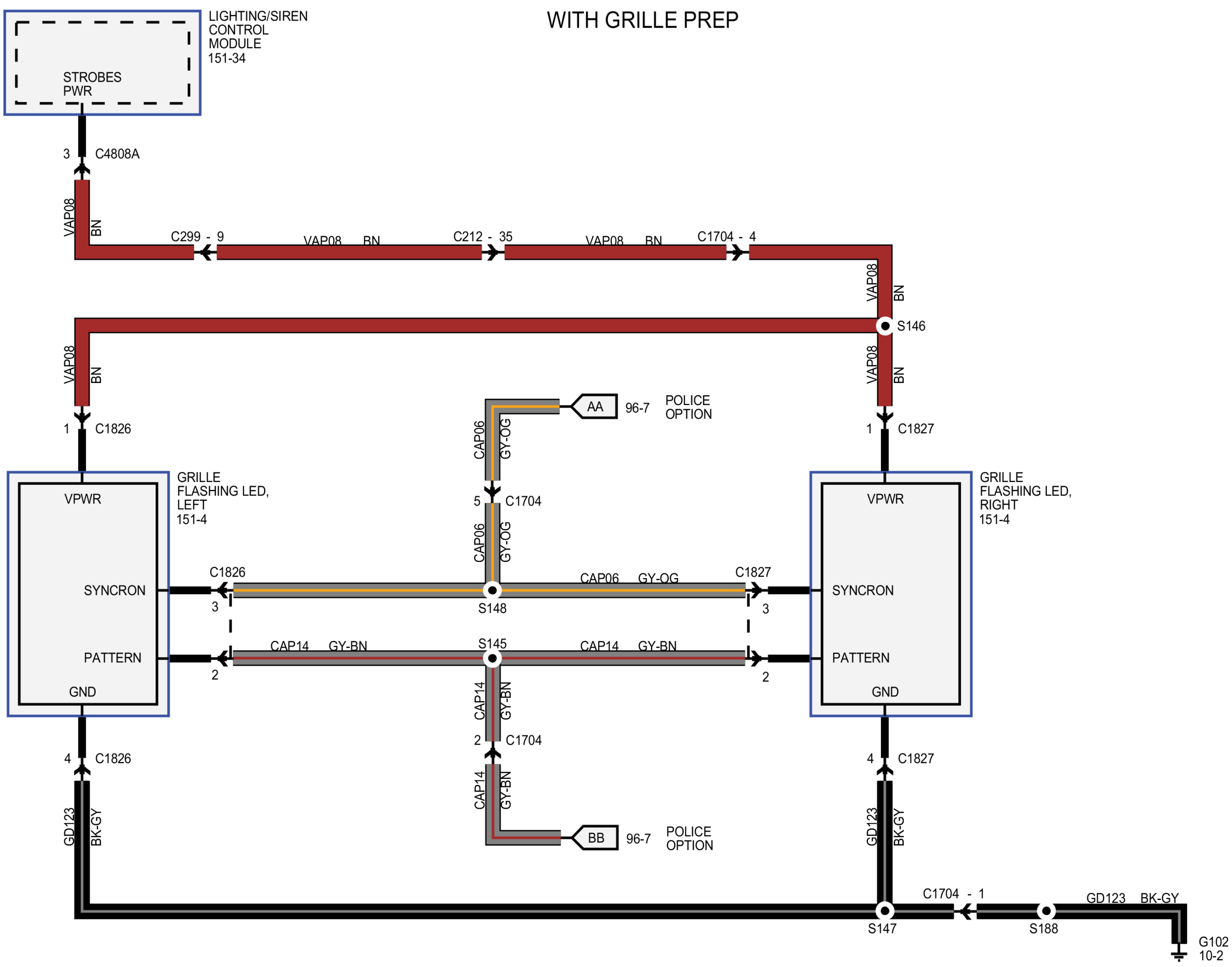
Section 2: Electrical

WITH GRILLE PREP


POLICE OPTION
96-7
M
96-7
CC
96-9
Z
CAP14 GY-BN
CAP06 GY-OG
CAP12 VT-OG
42
41
40
C213
S239
S238
S303
59
C3138
C3139
9
C516
C601
EXTERIOR MIRROR LH 151-40
EXTERIOR MIRROR RH 151-41
1
C598
C698
EXTERIOR MIRROR FLASHING LED, LEFT 151-40
EXTERIOR MIRROR FLASHING LED, RIGHT 151-41
VPWR
SYNCRON
PATTERN
GND
57
58
18
17
3
2
10
11
4
12
GD233
BK
S501
C3138 - 31
G300 10-13
G302 10-20
C3139 - 31
GD348
BK-YE
S602

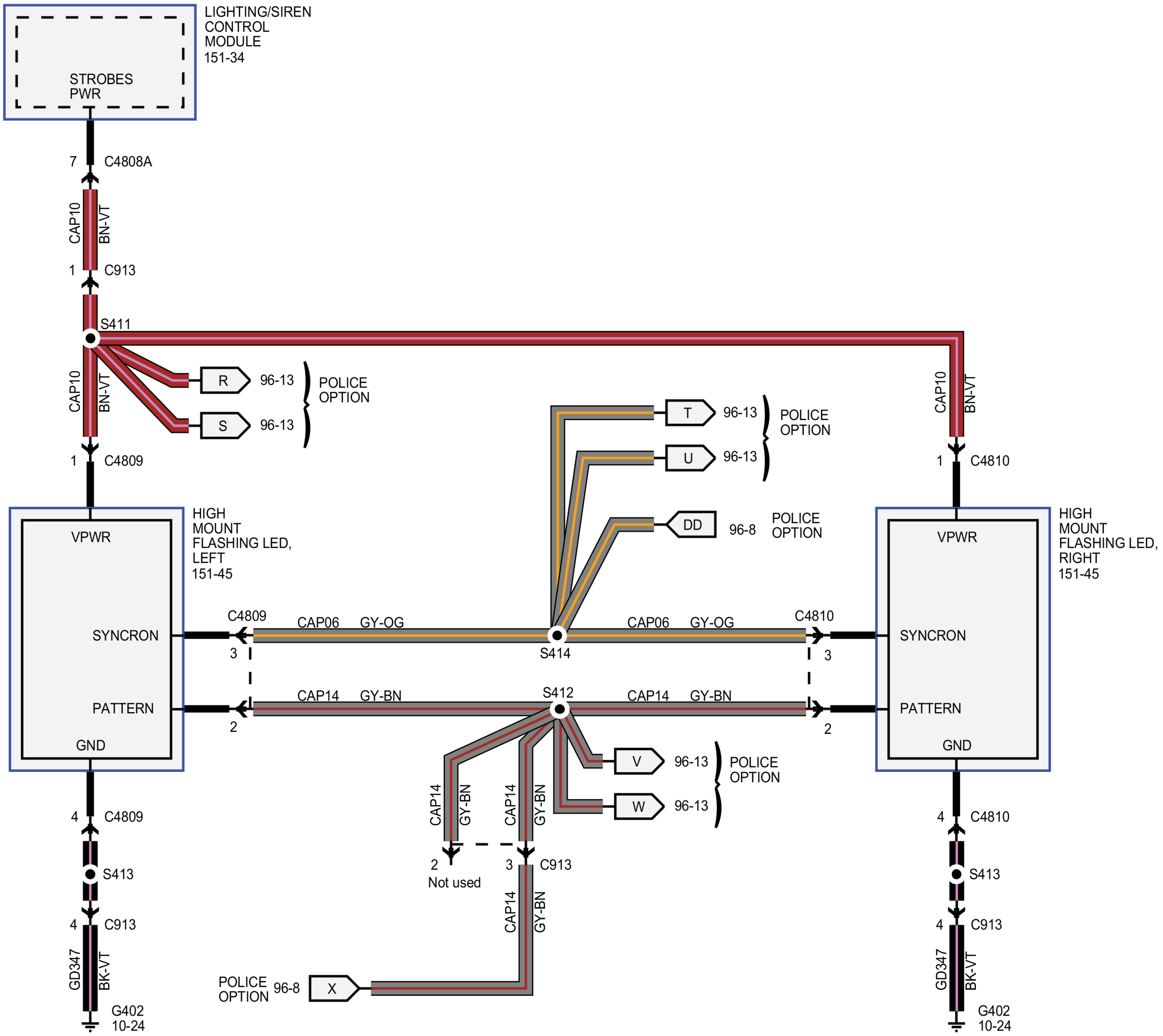
N0165611

Section 2: Electrical


WITH GRILLE PREP
LIGHTING/SIREN CONTROL MODULE 151-34
STROBES PWR
3 C4808A
VAP08 BN
C299 - 9
VAP08 BN
C212 - 35
VAP08 BN
C1704 - 4
VAP08 BN
S146
VAP08 BN
VAP08 BN
1 C1826
1 C1827
AA 96-7 POLICE OPTION
CAP06 GY-OG
5 C1704
CAP06 GY-OG
GRILLE FLASHING LED, LEFT 151-4
VPWR
SYNCRON
PATTERN
GND
C1826
3
S148
CAP06 GY-OG
C1827
3
CAP14 GY-BN
S145
CAP14 GY-BN
2
2
GRILLE FLASHING LED, RIGHT 151-4
VPWR
SYNCRON
PATTERN
GND
CAP14 GY-BN
2 C1704
CAP14 GY-BN
BB 96-7 POLICE OPTION
4 C1826
4 C1827
GD123 BK-GY
GD123 BK-GY
S147
C1704 - 1
S188
GD123 BK-GY
G102 10-2

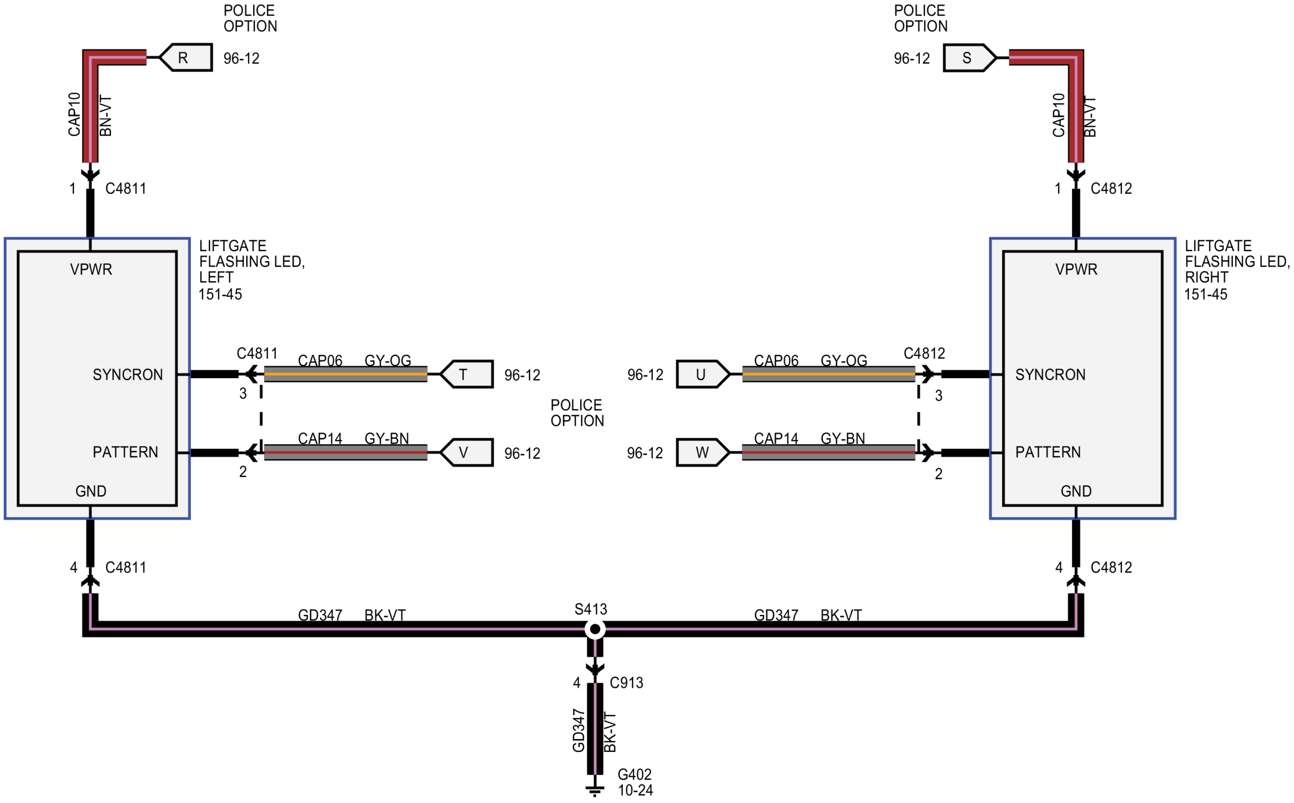
N0165610

Section 2: Electrical


LIGHTING/SIREN CONTROL MODULE 151-34
STROBES PWR
7 C4808A
CAP10 BN-VT
1 C913
S411
R 96-13
S 96-13
POLICE OPTION
CAP10 BN-VT
1 C4809
T 96-13
U 96-13
POLICE OPTION
DD 96-8
POLICE OPTION
CAP10 BN-VT
1 C4810
HIGH MOUNT FLASHING LED, LEFT 151-45
VPWR
SYNCRON
PATTERN
GND
C4809
CAP06 GY-OG
S414
CAP06 GY-OG
C4810
3
3
CAP14 GY-BN
S412
CAP14 GY-BN
2
2
HIGH MOUNT FLASHING LED, RIGHT 151-45
VPWR
SYNCRON
PATTERN
GND
V 96-13
W 96-13
POLICE OPTION
CAP14 GY-BN
CAP14 GY-BN
4 C4809
S413
4 C913
GD347 BK-VT
G402 10-24
2
Not used
3 C913
CAP14 GY-BN
POLICE OPTION 96-8 X
4 C4810
S413
4 C913
GD347 BK-VT
G402 10-24

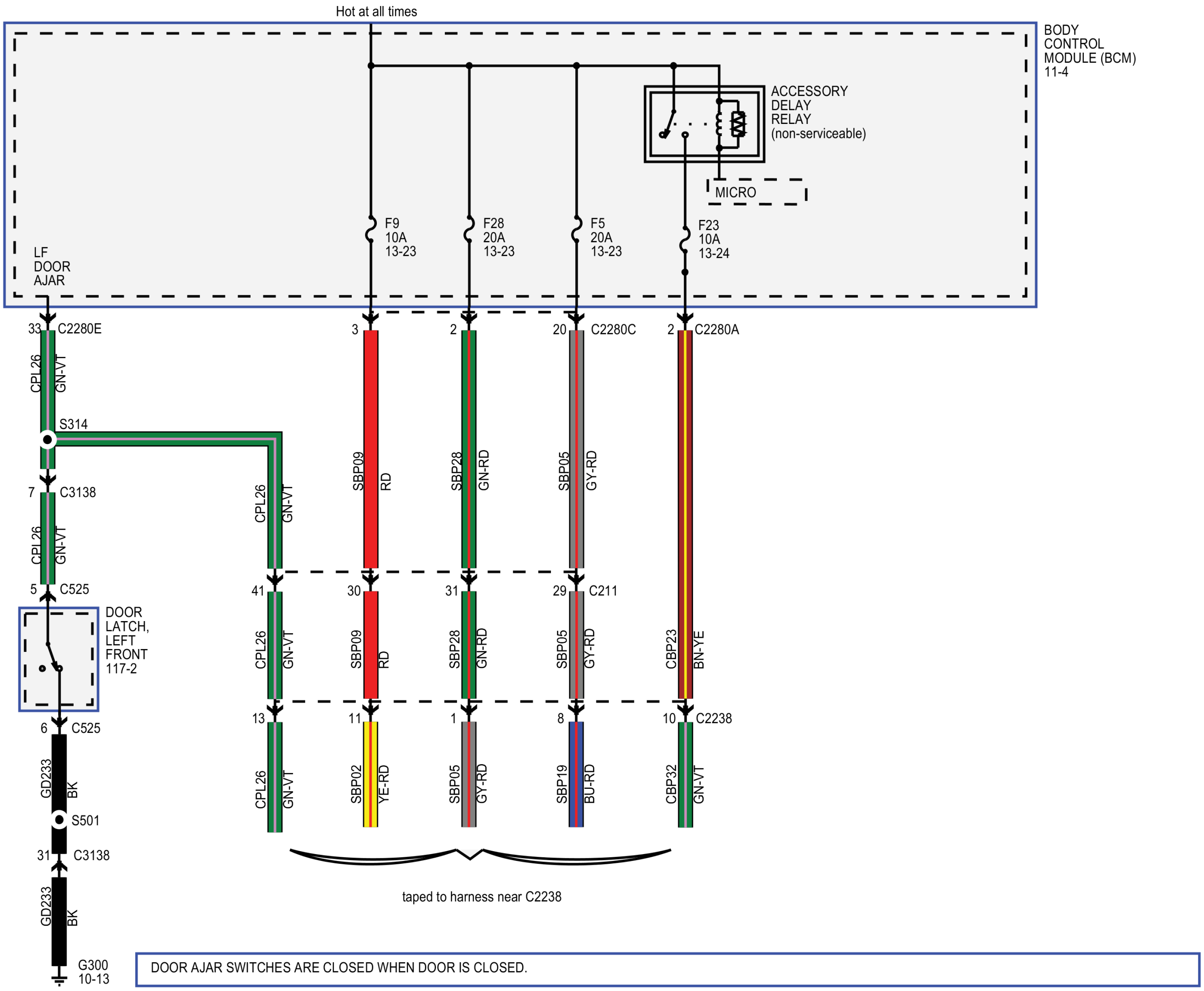
N0165609

Section 2: Electrical


POLICE OPTION
R
96-12
CAP10
BN-VT
1
C4811
LIFTGATE FLASHING LED, LEFT 151-45
VPWR
SYNCRON
PATTERN
GND
C4811
CAP06
GY-OG
3
T
96-12
CAP14
GY-BN
2
V
96-12
4
C4811
GD347
BK-VT
S413
POLICE OPTION
S
96-12
CAP10
BN-VT
1
C4812
LIFTGATE FLASHING LED, RIGHT 151-45
VPWR
SYNCRON
PATTERN
GND
96-12
U
CAP06
GY-OG
C4812
3
96-12
W
CAP14
GY-BN
2
4
C4812
GD347
BK-VT
4
C913
GD347
BK-VT
G402 10-24

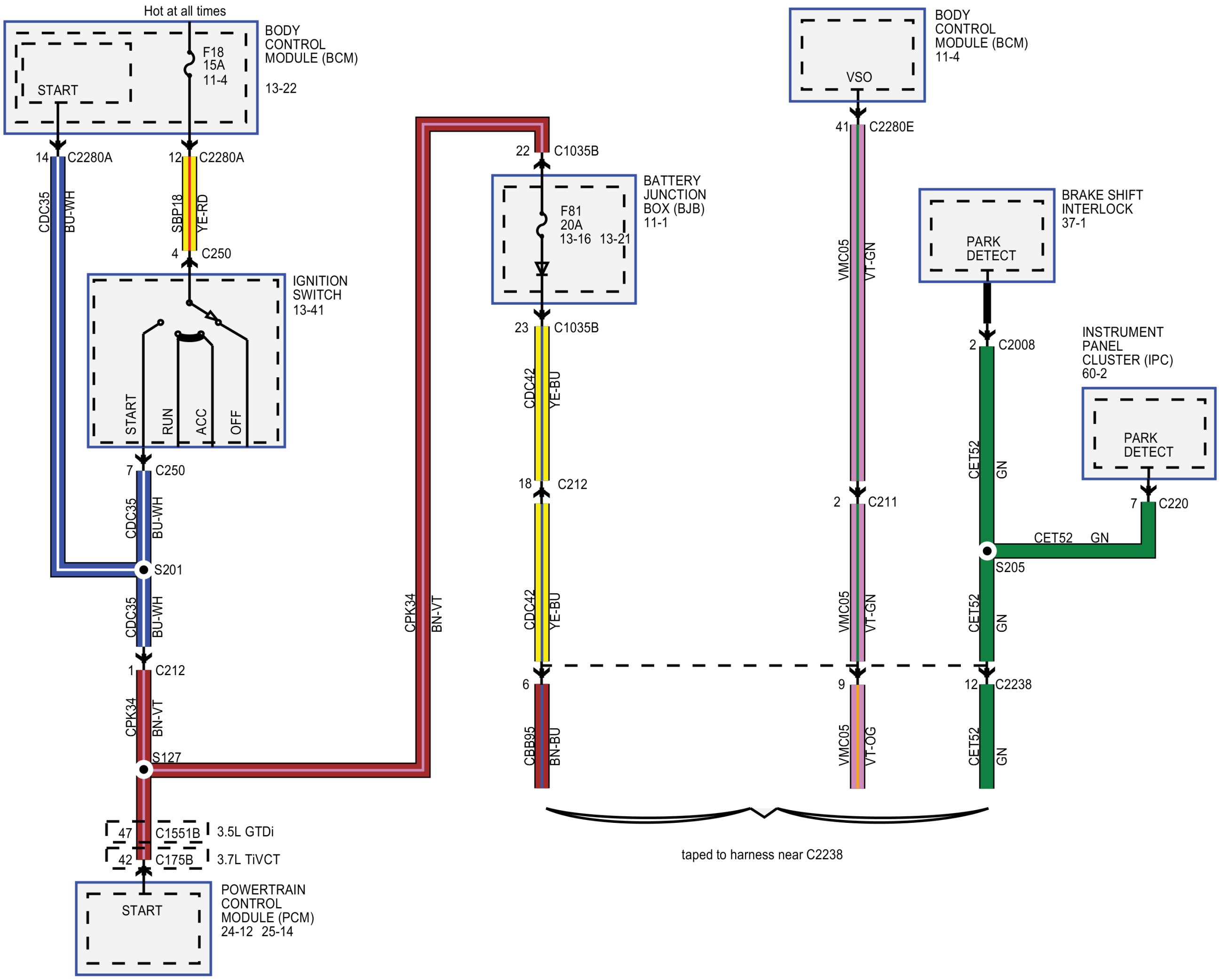
N0165579

Section 2: Electrical


Hot at all times
BODY CONTROL MODULE (BCM) 11-4
ACCESSORY DELAY RELAY (non-serviceable)
MICRO
F9 10A 13-23
F28 20A 13-23
F5 20A 13-23
F23 10A 13-24
LF DOOR AJAR
33 C2280E
3
2
20 C2280C
2 C2280A
CPL26 GN-VT
S314
SBP09 RD
SBP28 GN-RD
SBP05 GY-RD
CBP23 BN-YE
7 C3138
CPL26 GN-VT
5 C525
DOOR LATCH, LEFT FRONT 117-2
41
30
31
29 C211
6 C525
GD233 BK
S501
31 C3138
GD233 BK
G300 10-13
13
11
1
8
10 C2238
CPL26 GN-VT
SBP02 YE-RD
SBP05 GY-RD
SBP19 BU-RD
CBP32 GN-VT
taped to harness near C2238
DOOR AJAR SWITCHES ARE CLOSED WHEN DOOR IS CLOSED.

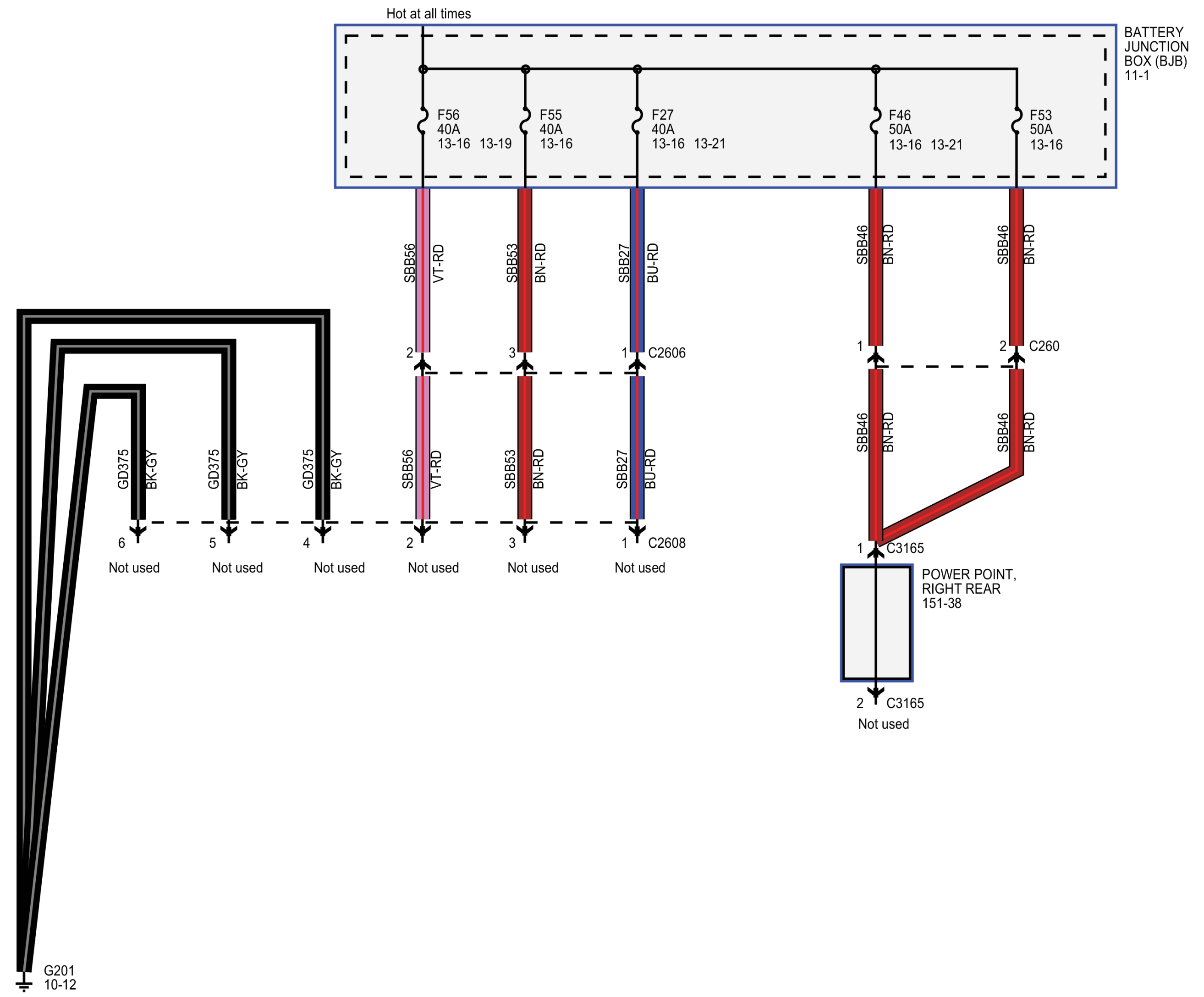
N0165580

Section 2: Electrical


Hot at all times
BODY CONTROL MODULE (BCM)
13-22
START
F18 15A 11-4
14 C2280A
12 C2280A
CDC35 BU-WH
SBP18 YE-RD
4 C250
IGNITION SWITCH 13-41
START
RUN
ACC
OFF
7 C250
CDC35 BU-WH
S201
CDC35 BU-WH
1 C212
CPK34 BN-VT
S127
47 C1551B 3.5L GTDi
42 C175B 3.7L TiVCT
POWERTRAIN CONTROL MODULE (PCM) 24-12 25-14
START
CPK34 BN-VT
22 C1035B
BATTERY JUNCTION BOX (BJB) 11-1
F81 20A 13-16 13-21
23 C1035B
CDC42 YE-BU
18 C212
CDC42 YE-BU
6
CBB95 BN-BU
BODY CONTROL MODULE (BCM) 11-4
VSO
41 C2280E
VMC05 VT-GN
2 C211
VMC05 VT-GN
9
VMC05 VT-OG
BRAKE SHIFT INTERLOCK 37-1
PARK DETECT
2 C2008
CET52 GN
INSTRUMENT PANEL CLUSTER (IPC) 60-2
PARK DETECT
7 C220
CET52 GN
S205
CET52 GN
12 C2238
CET52 GN
taped to harness near C2238

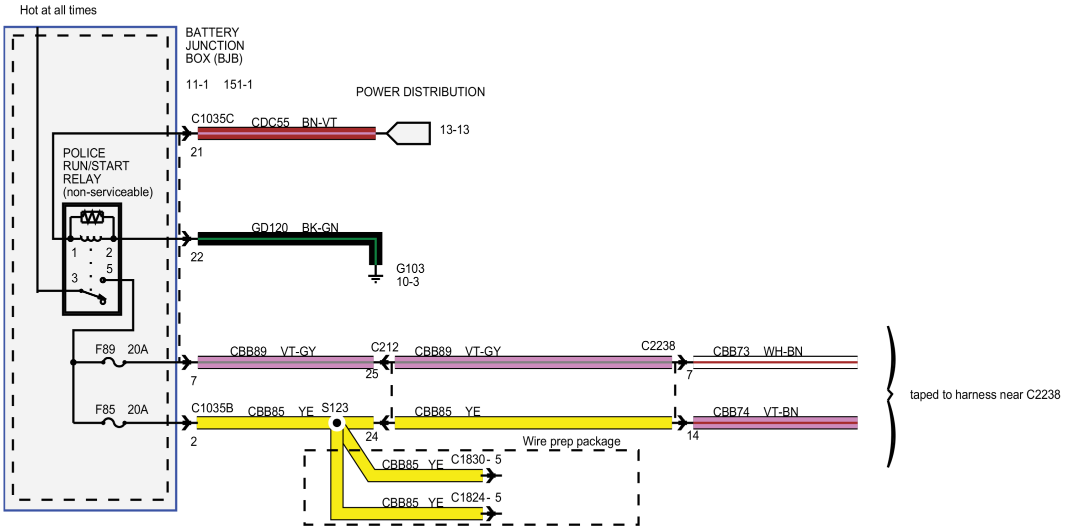
N0165581

Section 2: Electrical


Hot at all times
BATTERY JUNCTION BOX (BJB) 11-1
F56 40A 13-16 13-19
F55 40A 13-16
F27 40A 13-16 13-21
F46 50A 13-16 13-21
F53 50A 13-16
SBB56 VT-RD
SBB53 BN-RD
SBB27 BU-RD
SBB46 BN-RD
SBB46 BN-RD
2 3 1 C2606
1 2 C260
GD375 BK-GY
GD375 BK-GY
GD375 BK-GY
SBB56 VT-RD
SBB53 BN-RD
SBB27 BU-RD
SBB46 BN-RD
SBB46 BN-RD
6 Not used
5 Not used
4 Not used
2 Not used
3 Not used
1 C2608 Not used
1 C3165
POWER POINT, RIGHT REAR 151-38
2 C3165 Not used
G201 10-12

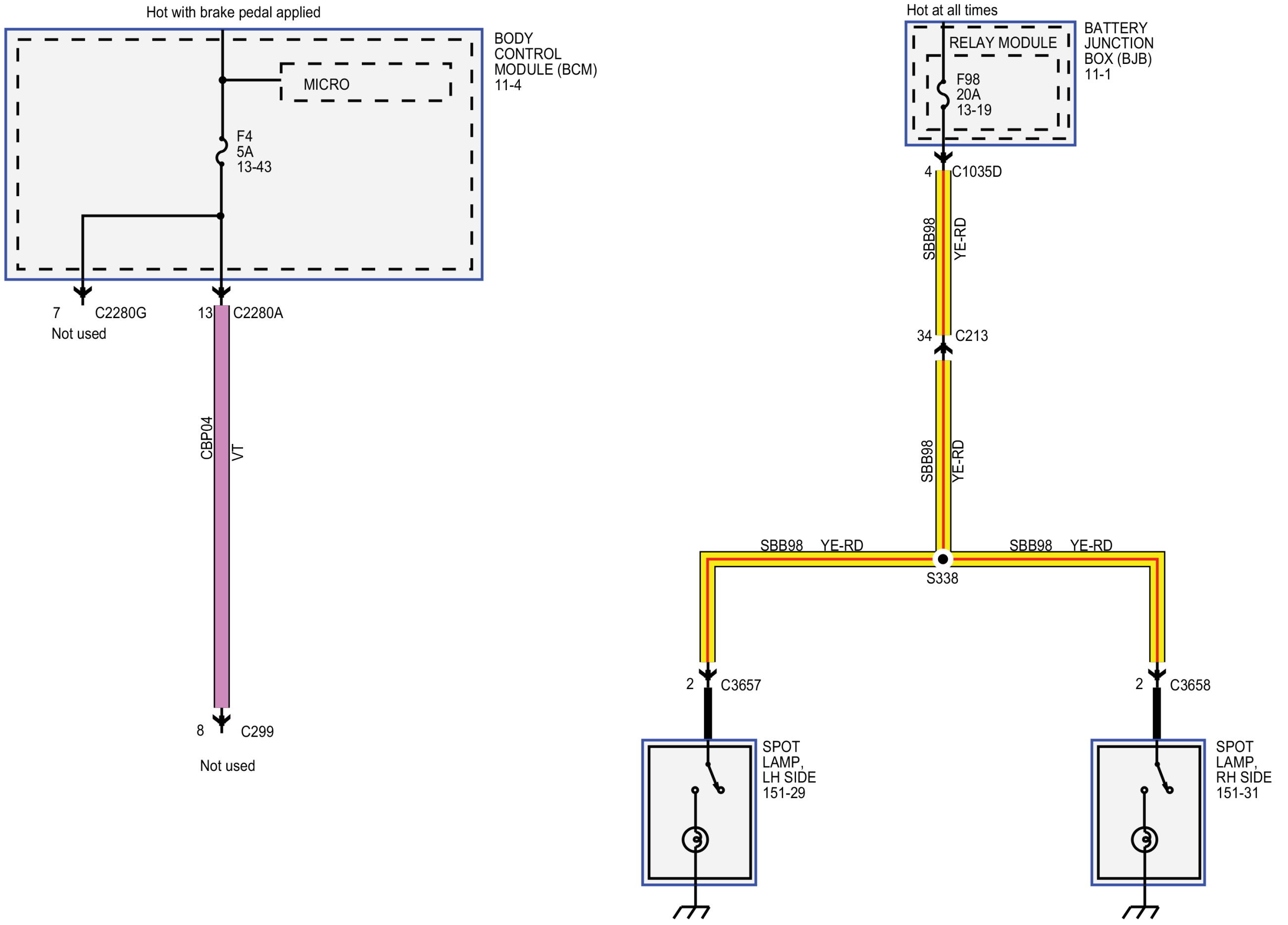
N0165582

Section 2: Electrical


Hot at all times
BATTERY JUNCTION BOX (BJB)
11-1 151-1
POWER DISTRIBUTION
C1035C
CDC55 BN-VT
13-13
21
POLICE RUN/START RELAY (non-serviceable)
1
2
3
5
GD120 BK-GN
22
G103
10-3
F89 20A
CBB89 VT-GY
C212
CBB89 VT-GY
C2238
CBB73 WH-BN
7
25
7
taped to harness near C2238
F85 20A
C1035B
CBB85 YE
S123
CBB85 YE
CBB74 VT-BN
2
24
14
Wire prep package
CBB85 YE C1830- 5
CBB85 YE C1824- 5

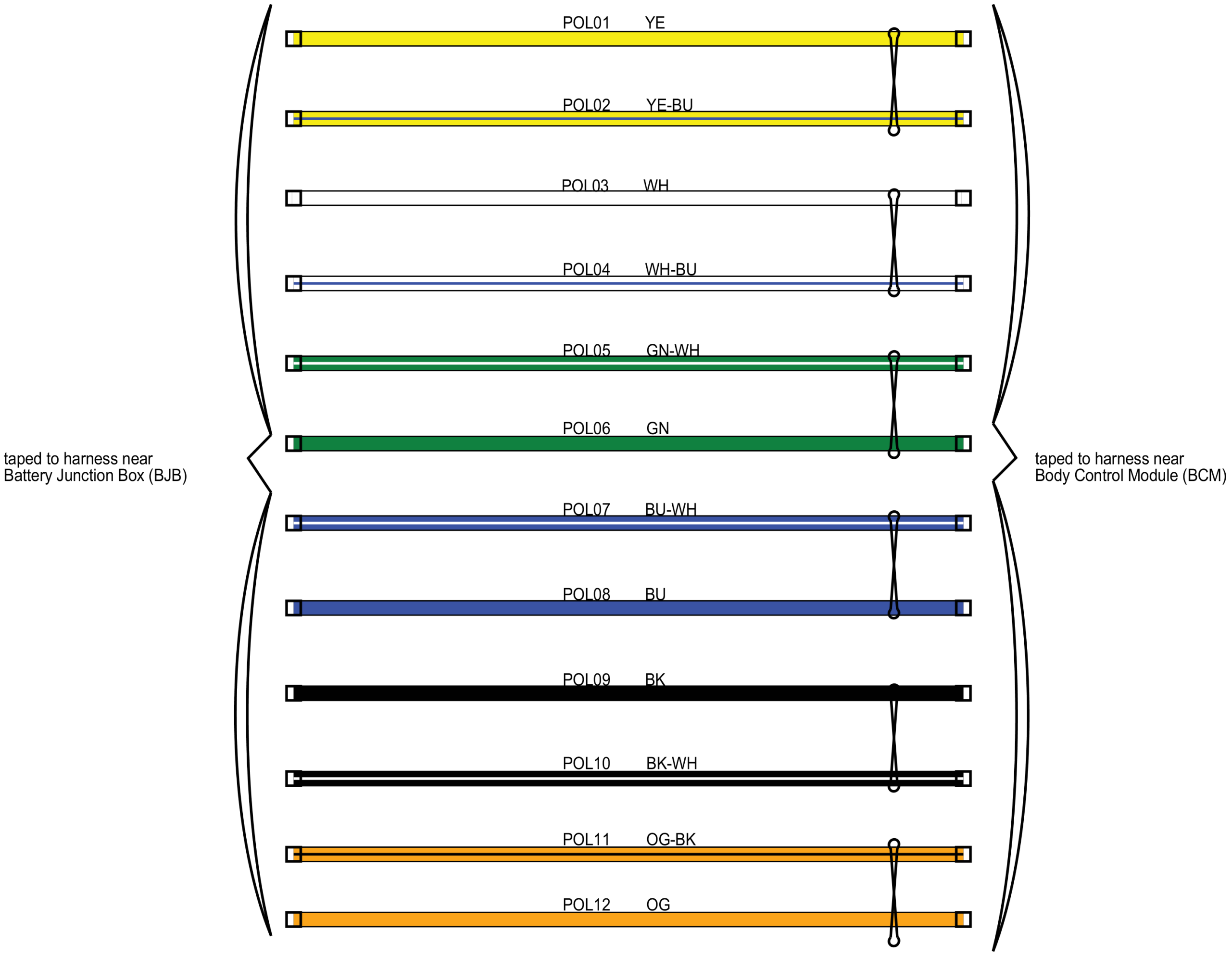
N0165583

Section 2: Electrical


Hot with brake pedal applied
BODY CONTROL MODULE (BCM) 11-4
MICRO
F4 5A 13-43
7 C2280G
Not used
13 C2280A
CBP04 VT
8 C299
Not used
Hot at all times
RELAY MODULE
BATTERY JUNCTION BOX (BJB) 11-1
F98 20A 13-19
4 C1035D
SBB98 YE-RD
34 C213
SBB98 YE-RD
SBB98 YE-RD
SBB98 YE-RD
S338
2 C3657
2 C3658
SPOT LAMP, LH SIDE 151-29
SPOT LAMP, RH SIDE 151-31

N0165584

Section 2: Electrical


POL01 YE
POL02 YE-BU
POL03 WH
POL04 WH-BU
POL05 GN-WH
POL06 GN
POL07 BU-WH
POL08 BU
POL09 BK
POL10 BK-WH
POL11 OG-BK
POL12 OG
taped to harness near Battery Junction Box (BJB)
taped to harness near Body Control Module (BCM)

N0165585

Table of Contents

Contents **PAGE**

Section 3: Installation Considerations 3-2
  Push Bumpers 3-2
  Skid Plates 3-2
  Siren and Grille Lights 3-2
  Partition Installation Guidelines 3-2
  Removal Process For Center Console Mounting Plates 3-18
  Console Design and Installation 3-18
  Electrical 3-25

Section 3: Installation Considerations

Section 3: Installation Considerations

Push Bumpers

Effect On Airbag Deployment

Different push bumper designs may each have different deformation characteristics in a crash situation that may or may not affect the deployment of airbags. Without the benefit of crash tests on vehicles equipped with push bumpers (there are a number of different styles available), it is the opinion of Ford Motor Company that installation of some push bumpers could affect the timing of the airbag deployment. Use of a push bumper that mounts solely to the vehicle's bumper should not have a significant effect on airbag deployment.

Effect On Weight Distribution

The balance and weight distribution of a vehicle is carefully planned to achieve optimal stability and handling. Push bumpers can change this weight distribution by adding excessive weight to the front of the vehicle. There are many different styles of push bumpers available. Depending on the mounting and weight of the push bumper to be installed, it could have an adverse effect on the handling of a vehicle. Always verify the vehicle ride height after the addition of a push bumper. For additional information, refer to Section 1: General Information, Bumper Height Verification in this guide. Adjust the ride height if the measurements are not within specifications.

Airflow

The engine cooling system on a vehicle relies on proper airflow through the radiator to keep the engine at its proper operating temperature. When adding a push bumper to a vehicle, make sure this airflow is not obstructed, especially when lights and sirens are mounted on the push bumper. Reduced airflow could put additional strain on the cooling system and shorten the operational life of related components. Elevated temperatures may also result in a reduced performance mode of operation intended to prevent temperature increase that may operate in a reduced power mode. During the installation process, keep the placement of components away from the grille area of the vehicle. For any components mounted in grille area above bumper, use factory installed locations and do not exceed sizing of factory-installed components to maintain required airflow. Do not mount equipment below the bumper in front of the lower front fascia opening.

Skid Plates

There are a few different skid plate designs and mounting locations available. When skid plates are mounted under the front of the vehicle covering the underside of the engine compartment, proper airflow that is necessary for the cooling system of the engine could be affected. As with push bumpers that obstruct the airflow entering the engine compartment, skid plates can obstruct airflow exiting the engine compartment. This obstruction may put a strain on the cooling system of components in the powertrain system and shorten the operational life of related components. Operation at excessive temperatures may result in a reduced performance mode to assist in preventing temperature increase.

Siren and Grille Lights

The engine cooling system relies on proper airflow through the radiator to keep the engine at its proper operating temperature. When adding sirens and grille lights to a vehicle, make sure this airflow is not obstructed. Reduced airflow could put additional strain on the cooling system and shorten the operational life of related components. During the installation process, keep the placement of components away from the grille area of the vehicle.

Partition Installation Guidelines

⚠ **WARNING:**
The partition and the installation hardware of the partition must not interfere with the proper operation of the safety belt, safety belt retractor, side impact sensor and the safety belt height adjusters. Failure to follow these instructions may result in personal injury.

⚠ **WARNING:**
The partition and the installation hardware of the partition must not interfere with the operation and deployment of the Safety Canopy and side airbags. Failure to follow these instructions may cause personal injury.

⚠ **WARNING:**
Installation of prisoner partitions may increase the risk of injury to front seat occupants if the vehicle is impacted from a high speed rear end collision. This risk should be balanced by the law enforcement agency against the risk of injury to the officer associated with prisoner transportation. Failure to follow these instructions may result in personal injury.

Safety Belt Retractor Utility and Sedan

The safety belt retractors are located in the base of the B-pillars. The pretensioner located in the retractor is referred to as the safety belt retractor pretensioner. In the event of an airbag deployment, pretensioners provide improved occupant protection by rapidly removing slack

Section 3: Installation Considerations

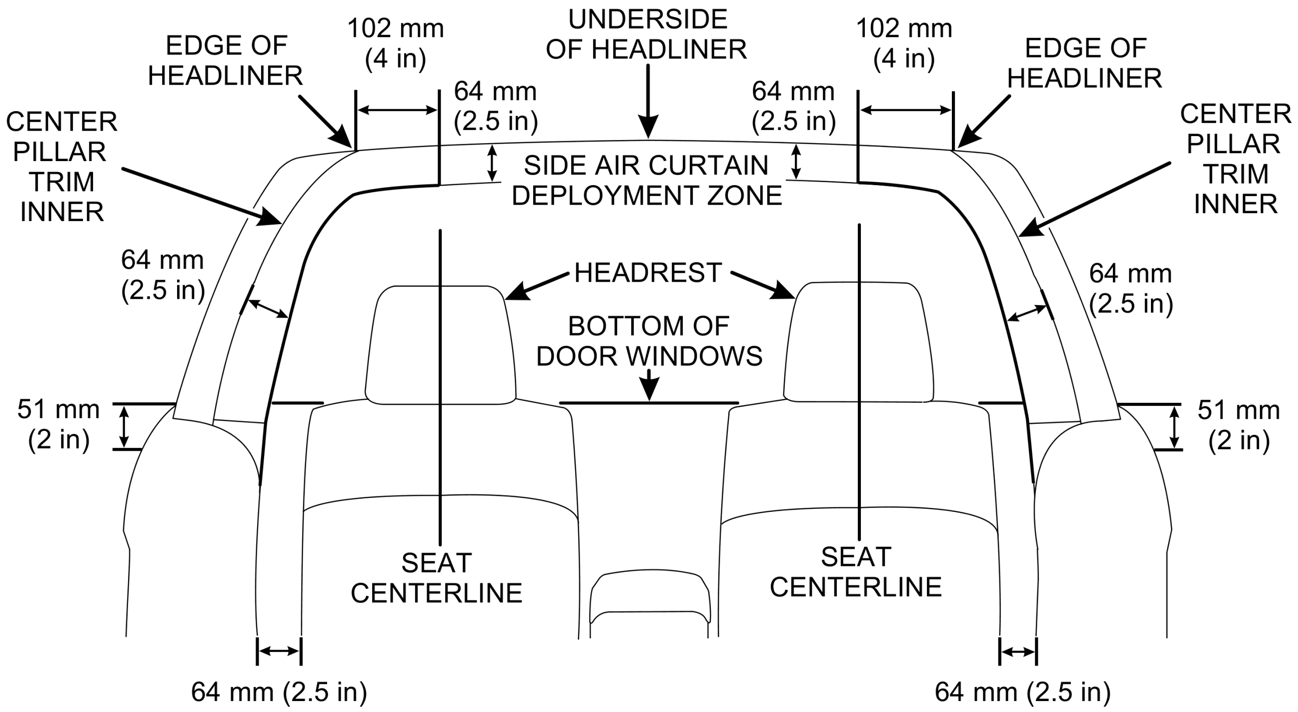
from the safety belt. Removing slack from the safety belt helps to properly position the occupant and allows for maximum effectiveness of the safety belts and the airbags.

- Do not use the safety belt retractor bolts for mounting the partition.
- Do not mount any partition hardware on the inboard side of the B-pillar within the bottom 305 mm (12 in).
- Do not mount any partition hardware that will interfere with the proper sealing of the door.
- Do not cover or attach to trim along top of front/rear side (driver side and passenger side) windows that will prevent or alter deployment of curtain airbags.

Airbag and Safety Belt Pretensioner SRS Components

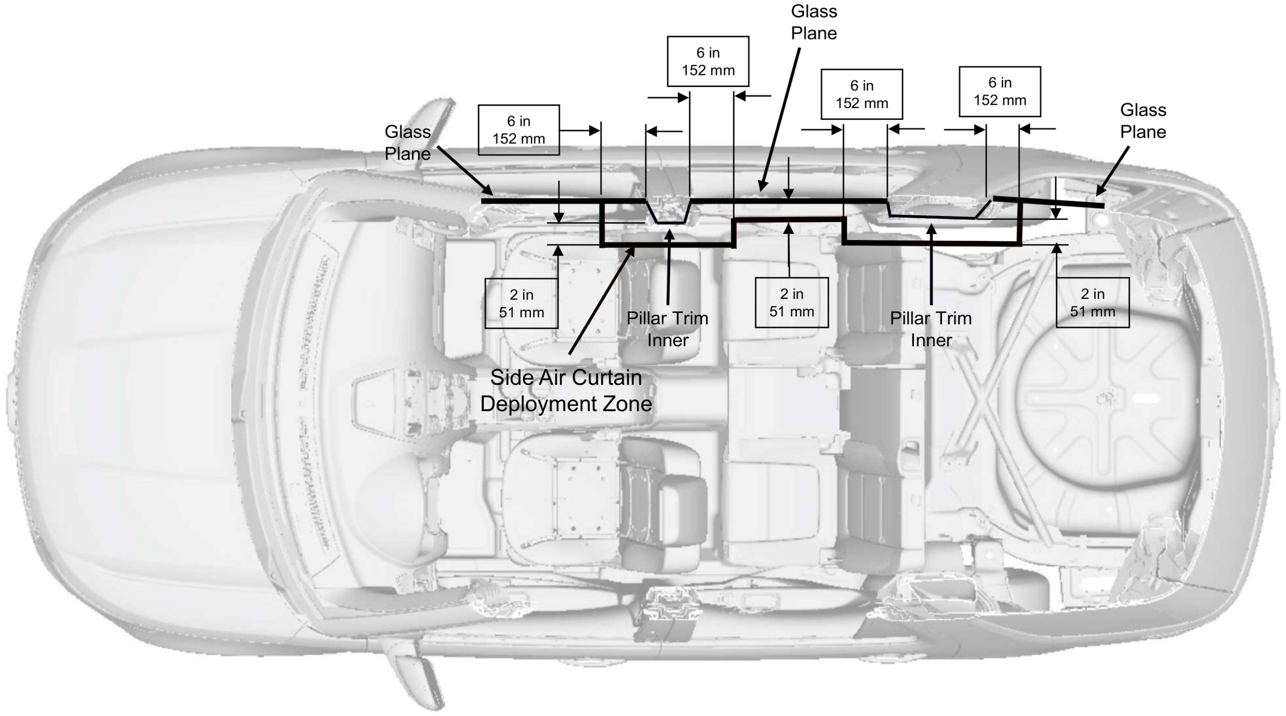
Refer to the following illustrations for locations that must not be used for partition or equipment mounting:

CURTAIN AIRBAG DEPLOYMENT ZONE


EDGE OF HEADLINER
102 mm (4 in)
UNDERSIDE OF HEADLINER
102 mm (4 in)
EDGE OF HEADLINER
CENTER PILLAR TRIM INNER
64 mm (2.5 in)
64 mm (2.5 in)
CENTER PILLAR TRIM INNER
SIDE AIR CURTAIN DEPLOYMENT ZONE
64 mm (2.5 in)
HEADREST
64 mm (2.5 in)
BOTTOM OF DOOR WINDOWS
51 mm (2 in)
51 mm (2 in)
SEAT CENTERLINE
SEAT CENTERLINE
64 mm (2.5 in)
64 mm (2.5 in)

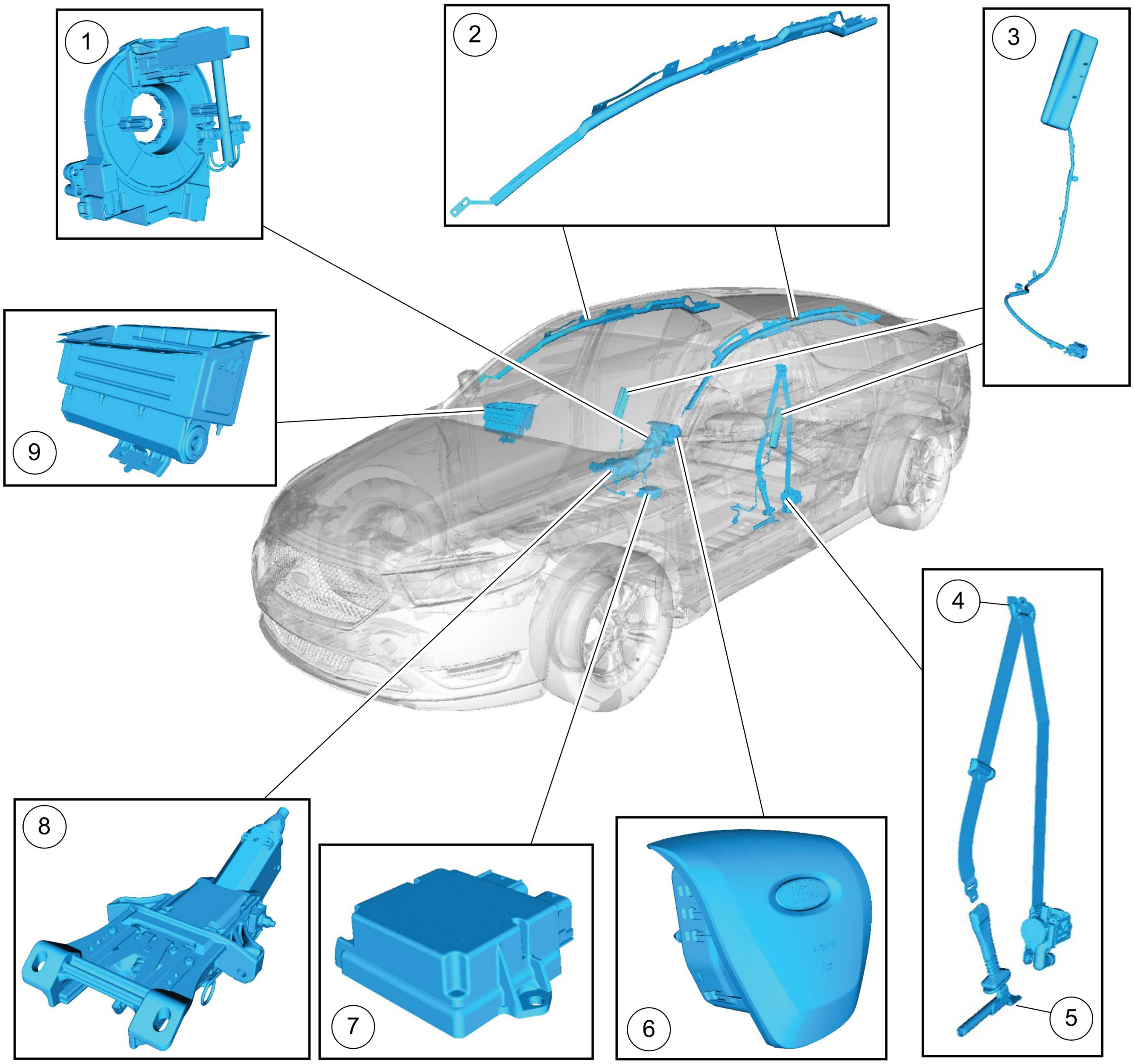
N0146301

Section 3: Installation Considerations


Glass Plane
6 in 152 mm
6 in 152 mm
6 in 152 mm
6 in 152 mm
Glass Plane
Glass Plane
2 in 51 mm
Pillar Trim Inner
2 in 51 mm
Pillar Trim Inner
2 in 51 mm
Side Air Curtain Deployment Zone

N0146530

Section 3: Installation Considerations



N0144808

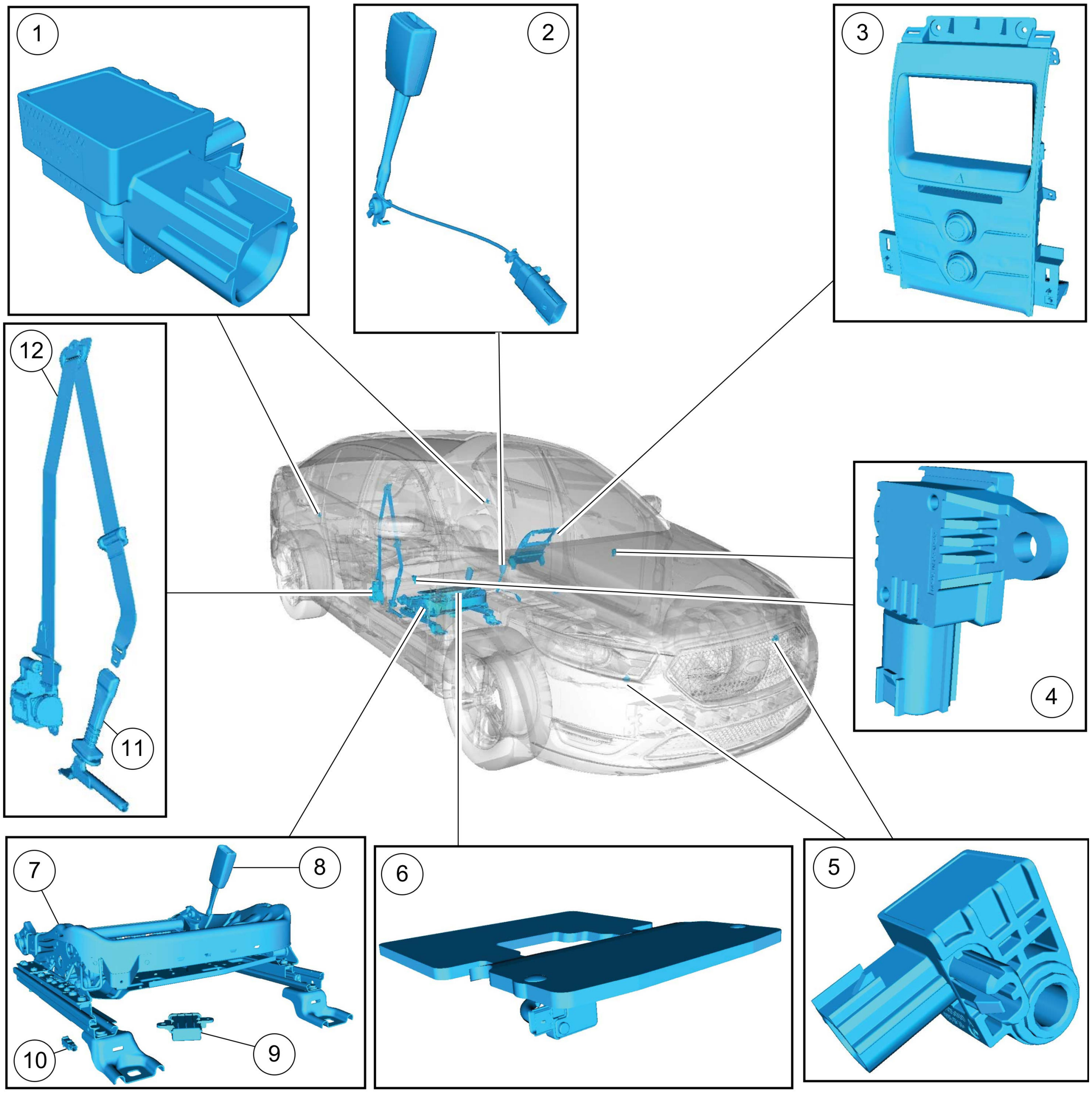
Item	Part Number	Description
1	14A664	Clockspring

Section 3: Installation Considerations

(Continued)

Item	Part Number	Description
2	042D94 RH/042D95 LH	Safety Canopy module
3	611D10 RH/611D11 LH	Side airbag module
4	611B09	Safety belt retractor and pretensioner
5	610E45	Safety belt anchor and pretensioner
6	043B13	Driver airbag module
7	14B321	RCM
8	3C529	Deployable steering column
9	044A74	Passenger airbag module

Section 3: Installation Considerations



N0144809

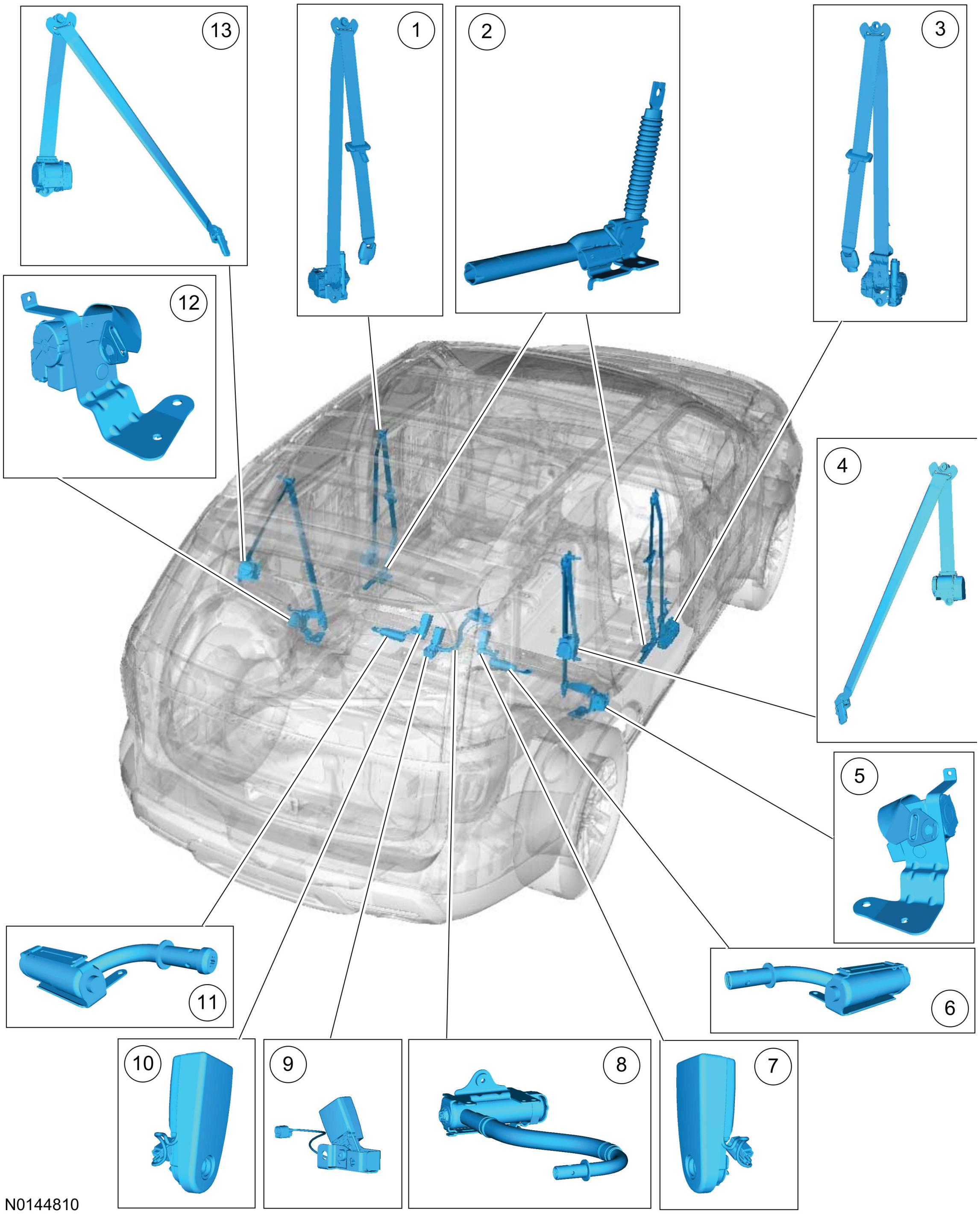
Item	Part Number	Description
1	14B004	C-pillar side impact sensor

Section 3: Installation Considerations

(Continued)

Item	Part Number	Description
2	61203	Safety belt buckle (includes buckle switch)
3	-	PAD indicator (part of 18842)
4	14B345	Front door side impact sensor
5	14B004	Front impact severity sensor
6	632A22	OCS sensor (bladder system)
7	61710	Passenger seat track assembly (includes OCS weight sensor bolts)
8	61202	Safety belt buckle (includes BTS and buckle switch)
9	14B056	OCSM (part of OCS weight sensor bolt system)
10	14B416	Seat position sensor (driver and passenger seat)
11	610E44	Safety belt anchor and pretensioner
12	611B08	Safety belt retractor and pretensioner

Section 3: Installation Considerations


13
1
2
3
12
4
5
6
11
10
9
8
7
N0144810

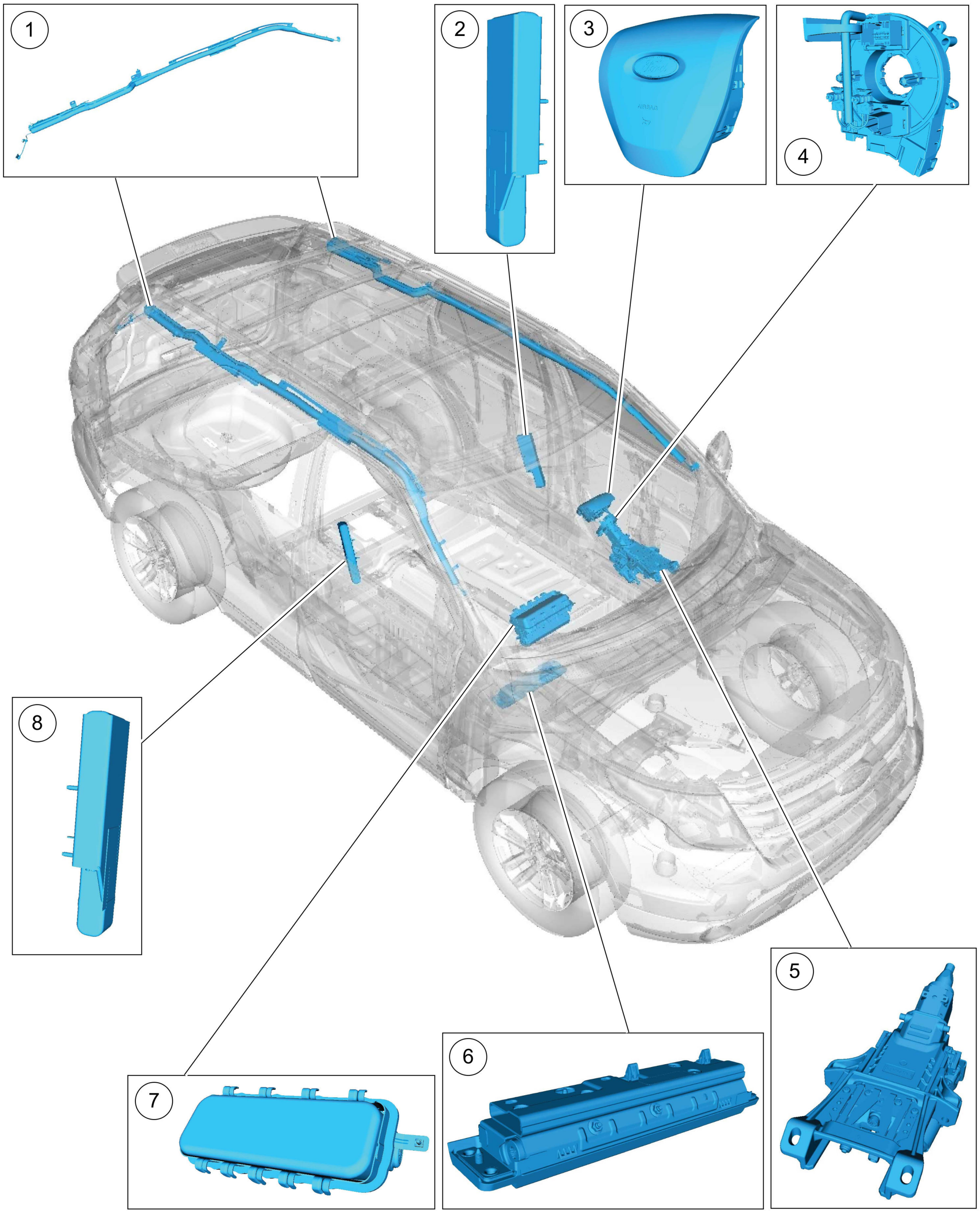
Item	Part Number	Description
1	611B09	Safety belt retractor and pretensioner

Section 3: Installation Considerations

(Continued)

Item	Part Number	Description
2	610E44 RH/61E45 LH	Safety belt anchor and pretensioner
3	611B08	Safety belt retractor and pretensioner with adaptive load limiter
4	611B68	Safety belt retractor with inflatable shoulder belt
5	611B68	Safety belt retractor lap belt (part of inflatable safety belt system)
6	61202	Safety belt inflator (40 percent seat)
7	60044	Safety belt buckle (40 percent seat) (part of inflatable safety belt system)
8	Part of 61203	Safety belt inflator (60 percent seat)
9	Part of 61203	Safety belt buckle (60 percent seat) (part of inflatable safety belt system)
10	60045	Safety belt buckle (40 percent seat) (part of inflatable safety belt system)
11	61203	Safety belt inflator (40 percent seat)
12	611B69	Safety belt retractor lap belt (part of inflatable safety belt system)
13	611B69	Safety belt retractor with inflatable shoulder belt

Section 3: Installation Considerations



N0144811

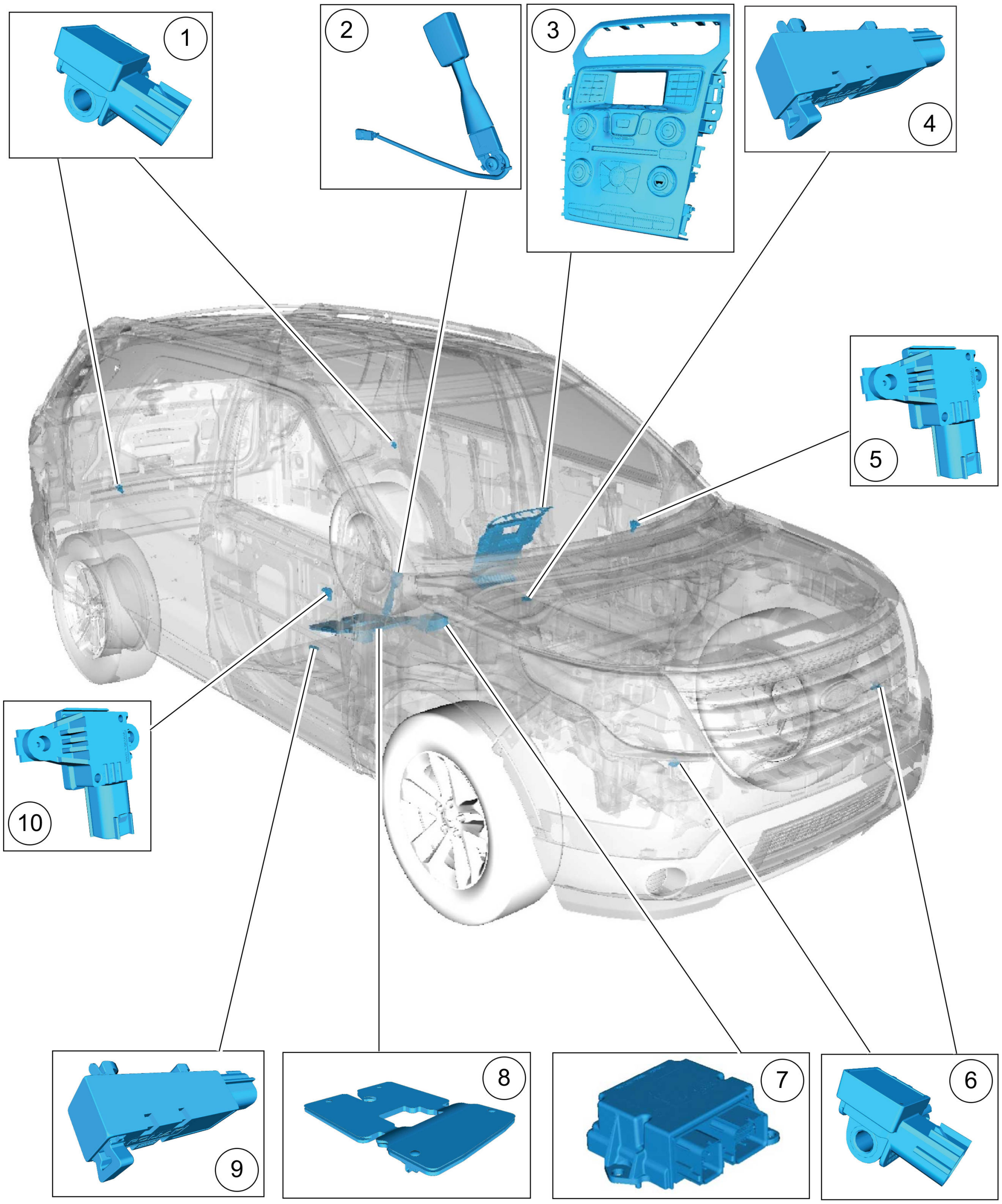
Item	Part Number	Description
1	042D94 RH/042D95 LH	Safety Canopy module

Section 3: Installation Considerations

(Continued)

Item	Part Number	Description
2	611D11	Safety Canopy module
3	043B13	Driver airbag module
4	14A664	Clockspring
5	3C529	Deployable steering column
6	045J76	Knee airbag module
7	044A74	Passenger airbag module
8	611D10	Passenger airbag module

Section 3: Installation Considerations



N0144812

Item	Part Number	Description
1	14B345	C-pillar side impact sensor

Section 3: Installation Considerations

(Continued)

Item	Part Number	Description
2	61202	Passenger safety belt buckle with BTS
3	Part of 18842	PAD indicator
4	14B416	Seat position sensor (driver)
5	14B345	Front door side impact sensor
6	14B345	Front impact severity sensor
7	14B321	RCM
8	632A22	OCS sensor
9	14B416	Front passenger seat position sensor
10	14B345	Front door side impact sensor

Center Console Mounting Plate Sedan Police Interceptor

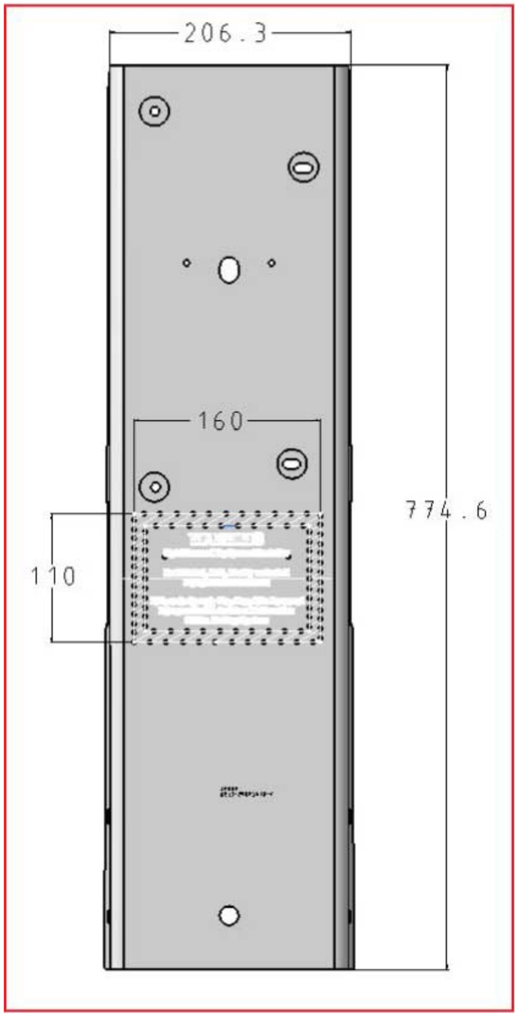
⚠ **WARNING:**

Remove console mounting plate from vehicle prior to drilling and/or modification for preparation and/or mounting of police equipment. The Restraints Control Module (RCM) is mounted beneath the console mounting plate. Damage to the RCM can affect airbag deployment and stability control system and may result in personal injury.

- Do not drill or perform any modification of the console mounting plate while in vehicle.
- Do not exceed total weight of 75 lbs for items mounted to the console mounting plate.
- Do not use fasteners that extend through the console mounting plate and contact the RCM or wiring located below the console mounting plate.
- Do not use self-tapping screws.
- Use blunt head fasteners only. Rivets, round-head carriage bolts with threads inboard of sheet metal.

Sedan Center Console Mounting Plate (dimensions in mm)

Section 3: Installation Considerations

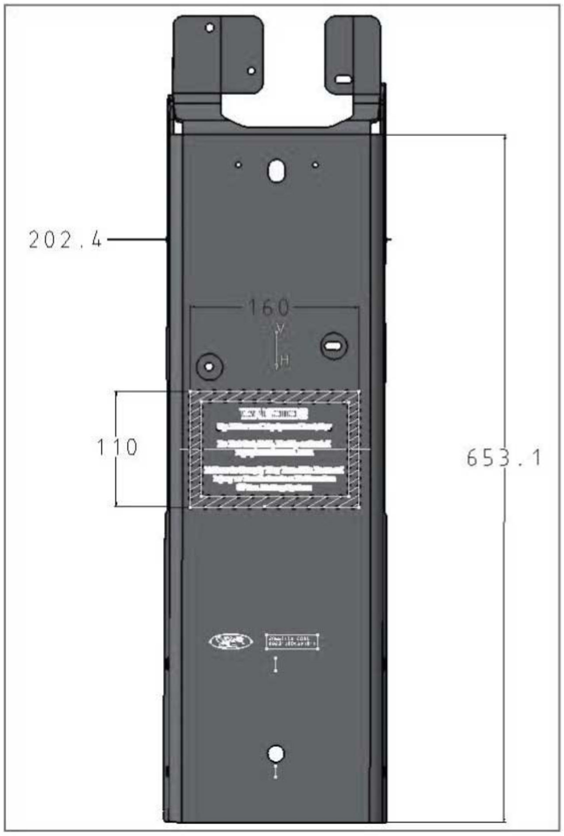


N0140573

Utility Center Console Mounting Plate (dimensions in mm)

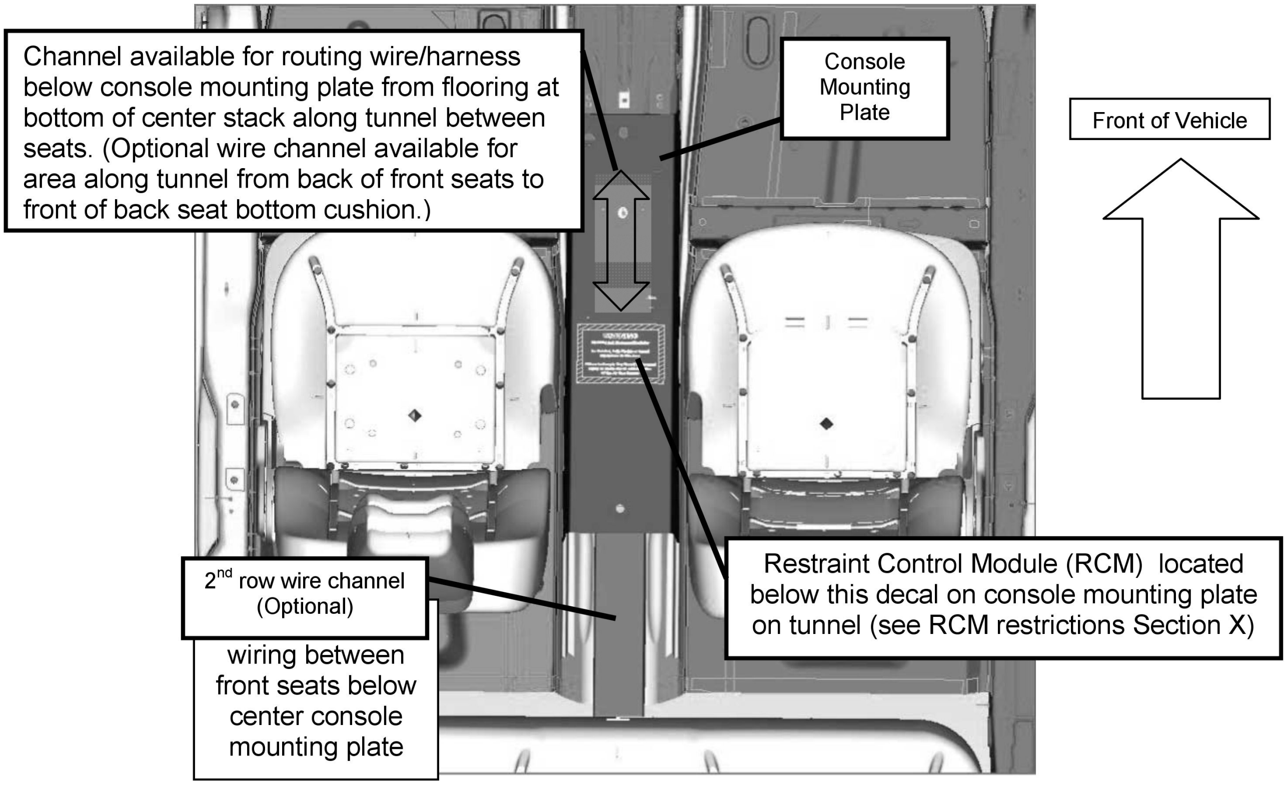
Section 3: Installation Considerations

Center Console Mounting Plate


202.4
160
V
H
110
653.1

N0140576

Section 3: Installation Considerations



Channel available for routing wire/harness below console mounting plate from flooring at bottom of center stack along tunnel between seats. (Optional wire channel available for area along tunnel from back of front seats to front of back seat bottom cushion.)

Restraint Control Module (RCM) located below this decal on console mounting plate on tunnel (see RCM restrictions Section X)

wiring between front seats below center console mounting plate

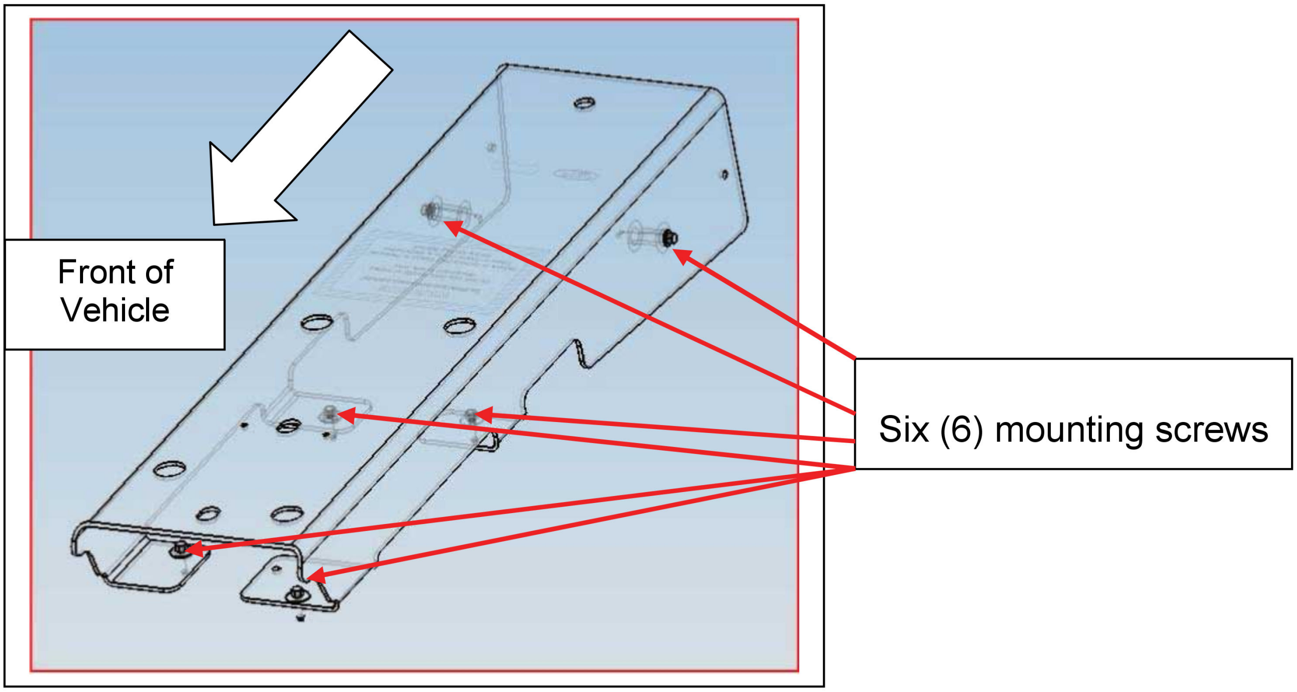
N0140572

Requirements when routing wire through the console mounting plate or replacing the factory installed console mounting plate between the front seats:

- Maintain a minimum of 6 mm clearance to a fixed position hard surface, console and/or plate with no relative motion with respect to the Restraints Control Module (RCM) and/or connector/wiring.
- Maintain a minimum of 20 mm clearance to a surface that has relative motion with respect to the RCM and/or connector/wiring. Wiring routed near the RCM and/or connector/wiring should be retained to eliminate contact under all vehicle operating conditions. Wiring harness should not be loose in proximity of the RCM, connector or wiring.

Section 3: Installation Considerations

Removal Process For Center Console Mounting Plates



N0140574

1. Remove the six screws securing the console mounting plate to the body.

- Front and middle attaching bolts tighten to 9.0 Nm.
- Rear attachment bolts tighten to 12 Nm.

2. Slide the console mounting plate forward in vehicle approximately 13 mm (0.5 in.) until contact is made with the instrument panel.
3. Lift the rearward end of the console mounting plate at approximately 45 degree angle upwards while holding the front end of the console mounting plate down.
4. Remove the console mounting plate by lifting it rearward along the 45 degree angle.
5. To install reverse the removal procedure.

Console Design and Installation

Restraints Control Module (RCM) Sedan and Utility

⚠ **WARNING:**

The RCM is mounted on the center tunnel under the instrument panel. The RCM orientation and location are critical for proper operation of the restraint systems. Do not relocate the RCM. Do not use the RCM mounting bolts for attachment purposes of any equipment.

NEW Extended Power Module (BECMB) Sedan and Utility

Section 3: Installation Considerations

⚠ **WARNING:**

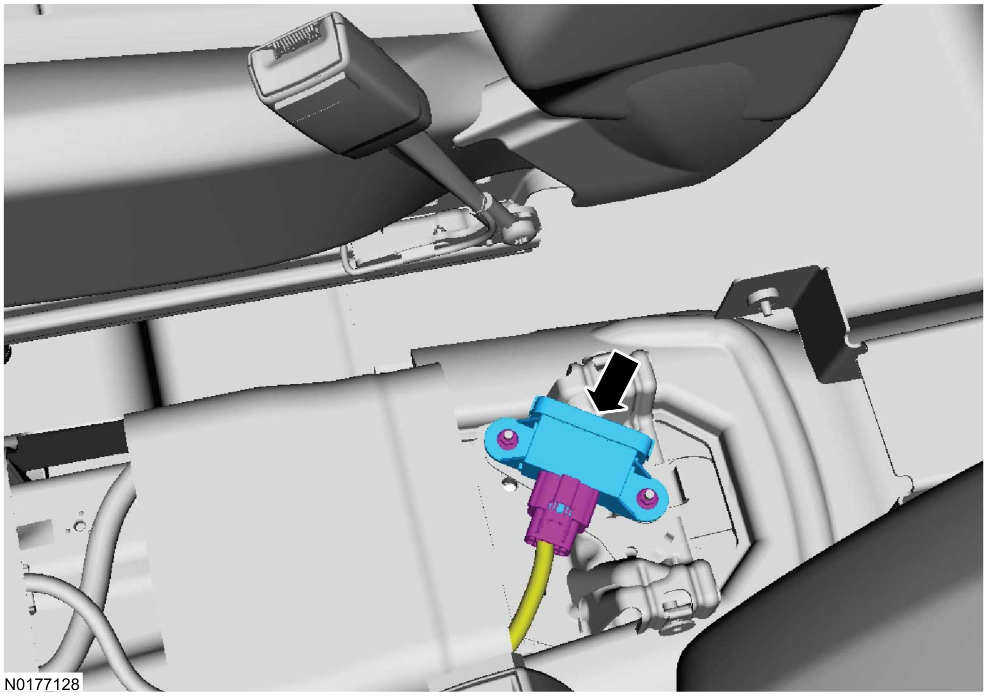
The BECMB is mounted just forward of the RCM on the center tunnel. The BECMB location can be relocated but the length of the wire harness can not be changed.

The BECMB provides system voltage to the RCM and Occupant Classification System Module (OCSM) when the ignition is ON. Additionally, the BECMB is designed to ensure that the RCM and OCSM remain powered if the ignition is turned off while the vehicle is moving at a speed greater than 4 Km/h (2.5mph).

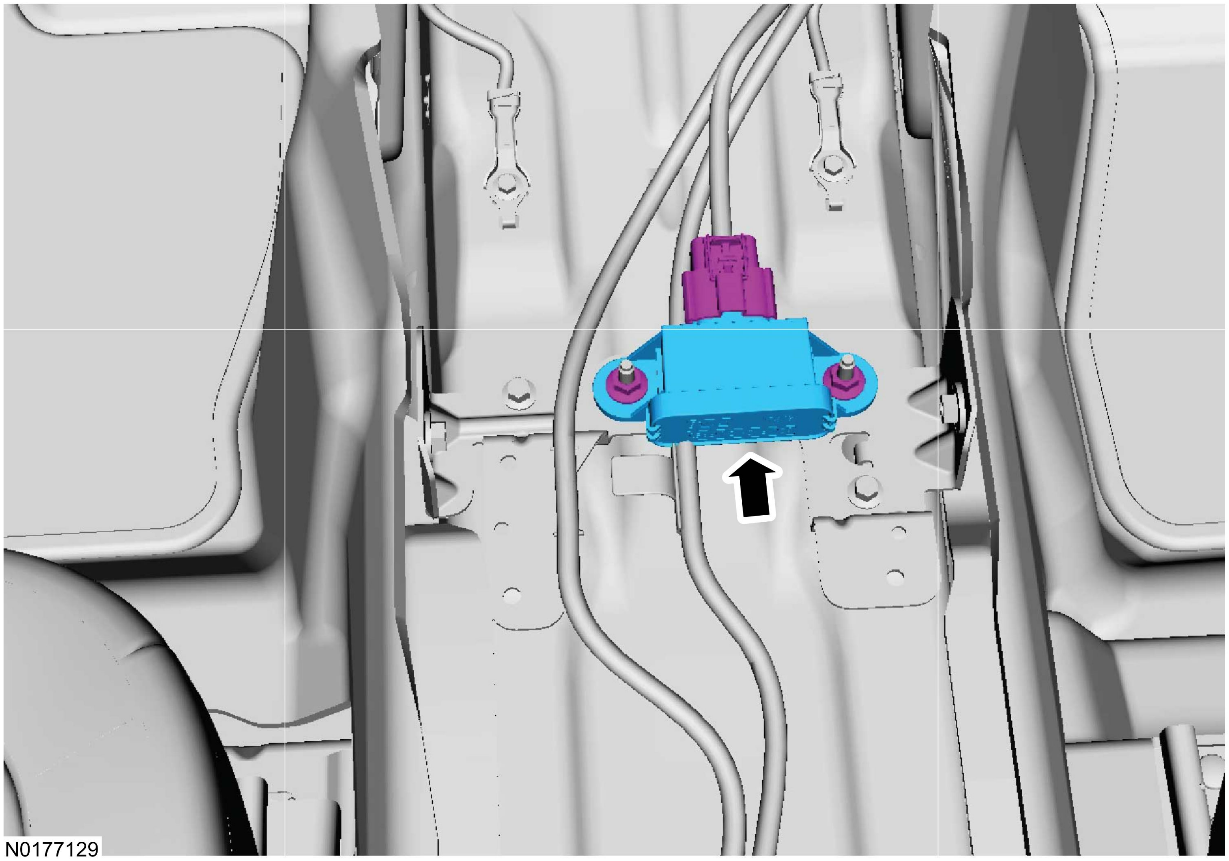
If the ignition is turned off while the vehicle is travelling at a speed above 4 km/h (2.5 mph), the BECMB maintains system voltage on the RCM and OCSM power supply circuits. Once the vehicle speed drops below the threshold while the ignition is off, the BECMB powers down the RCM and OCSM. If the vehicle speed rises above the threshold again, the BECMB does not reactivate the power supply to the RCM and OCSM. They remain off until the ignition is turned on again.

If a vehicle is parked, with the ignition off, the BECMB does not provide power to the RCM and OCSM. If the vehicle begins to move, while the ignition is still off, the BECMB does not power the RCM or OCSM.

When the vehicle has been started using the remote start feature (if equipped), the ignition status is off, but the BECMB powers the RCM in order to detect a collision and disable the fuel pump, if necessary.



Section 3: Installation Considerations


N0177129

Airbag Deployment Interference

⚠ **WARNING:**

Do not place objects or mount equipment in front of the airbag module cover or in front seat areas that may come in contact with a deploying airbag. Dash, tunnel or console-mounted equipment should be placed within the specified zone. Dash, tunnel or console-mounted equipment should not be placed outside of the specified zone. Failure to follow these instructions may result in personal injury.

⚠ **WARNING:**

Do not mount equipment between the side of the front seat and the door trim that would block deployment of the side airbag. Failure to follow these instructions may result in personal injury.

⚠ **WARNING:**

The partition and the installation hardware of the partition must not interfere with the operation and deployment of the roll curtain airbags and side airbags. Failure to follow these instructions may cause personal injury.

⚠ **WARNING:**

Do not remove or change the torque on the fasteners attaching the accessory bracket to the vehicle.

⚠ **WARNING:**

Section 3: Installation Considerations

Restraints system is designed to function optimally with a center console. If a partition is used in the vehicle, a center console is not required. Without a partition a center console or structure similar to a center console is required for optimal function of the second row restraints system.

Driver/passenger airbags affect the way police equipment can be mounted in police vehicles. Any surfaces that could come into contact with an airbag during deployment must not damage the airbag or alter its deployment path. Sharp edges, corners or protrusions could damage the nylon airbag material and reduce the effectiveness of the airbag. Do not mount or place any objects in the deployment path of an airbag. Airbags must be allowed to fully deploy without restriction. The deployment of airbags is not compatible with any configuration of police equipment mounting that places objects in the airbag deployment path. Equipment mounted or placed in the deployment area of an airbag will reduce the effectiveness of the airbag, damage the airbag and potentially damage or dislodge the equipment.

Airbag deployment drawings are provided in Section 5. Consult the drawings before equipment is installed inside the passenger compartment to make sure that the mounted equipment does not interfere with airbag deployment.

Sedan and Utility Police Interceptor

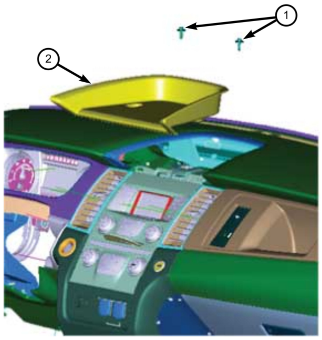
Universal Top Tray

⚠ **WARNING:**

Universal Top Tray available for mounting police equipment. Police equipment mounted on universal access/mounting tray must not obstruct visibility and/or front passenger airbag deployment path.

Police equipment mounted to universal top tray must not exceed 6 lbs. Weight should be distributed evenly over surface of the universal top tray. Remove the universal top tray prior to preparation and/or mounting police equipment to the universal top tray. Removal process for universal top tray from the instrument panel

1. Remove 2 bolts from universal top tray.
2. Slide the Universal Top Tray (UTT) rearward then lift upward.



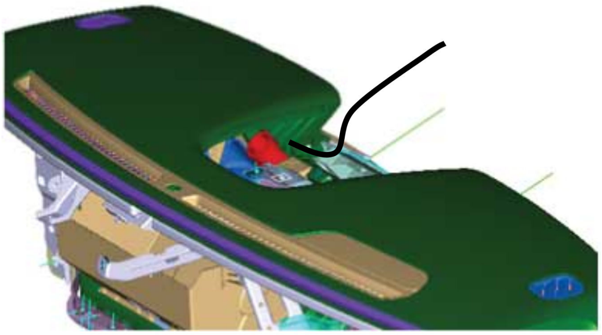
N0145266

3. Mount police component to universal top tray.

- Police equipment mounted to universal top tray must not exceed 6 lbs.
- Weight should be distributed evenly over surface of the universal top tray.
- Use self-locking hardware.
- Drill holes only when tray is out of the vehicle.

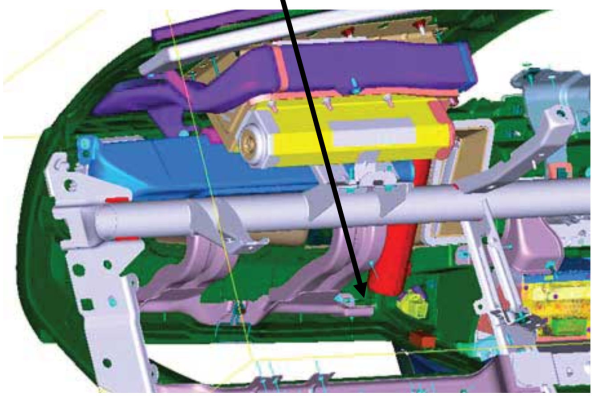
4. If wire will be routed through tube from top of instrument panel under universal top tray, locate tube, insert wire in tube and pull the wire out through bottom of tube.

Section 3: Installation Considerations



Universal routing tube.

N0140577



Pull wiring out bottom end of tube, directing it toward Console Mounting Plate.

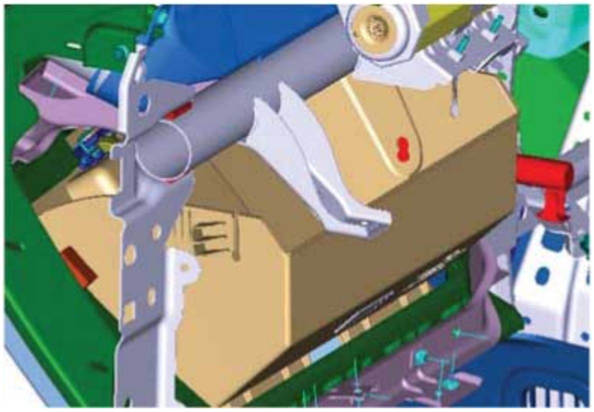
N0140578

5. For easier wire routing, the glove box maybe removed.

- Open glove box.

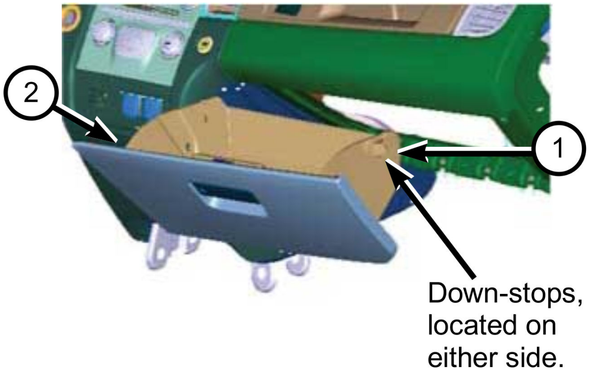
Section 3: Installation Considerations

- Prior to glove box removal, always pop glove box damper out of retaining hole inside glove box.



N0140582

- Simultaneously push 1 and 2 in back sides of glove box, disengaging down-stops.
- Tip glove box down on the bottom hooks over the pins and remove.

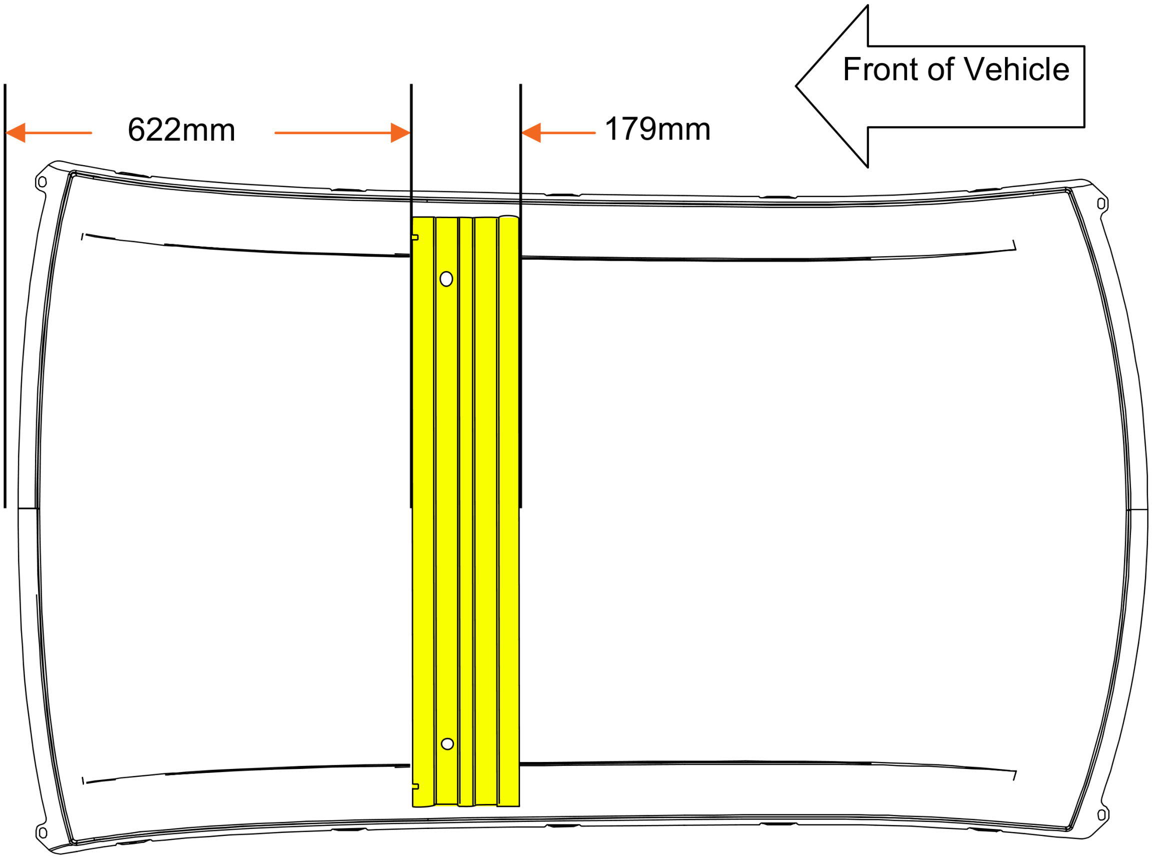


N0140583

Sedan Interceptor Light Bar Installation Considerations

Approximate location of roof bow.

Section 3: Installation Considerations

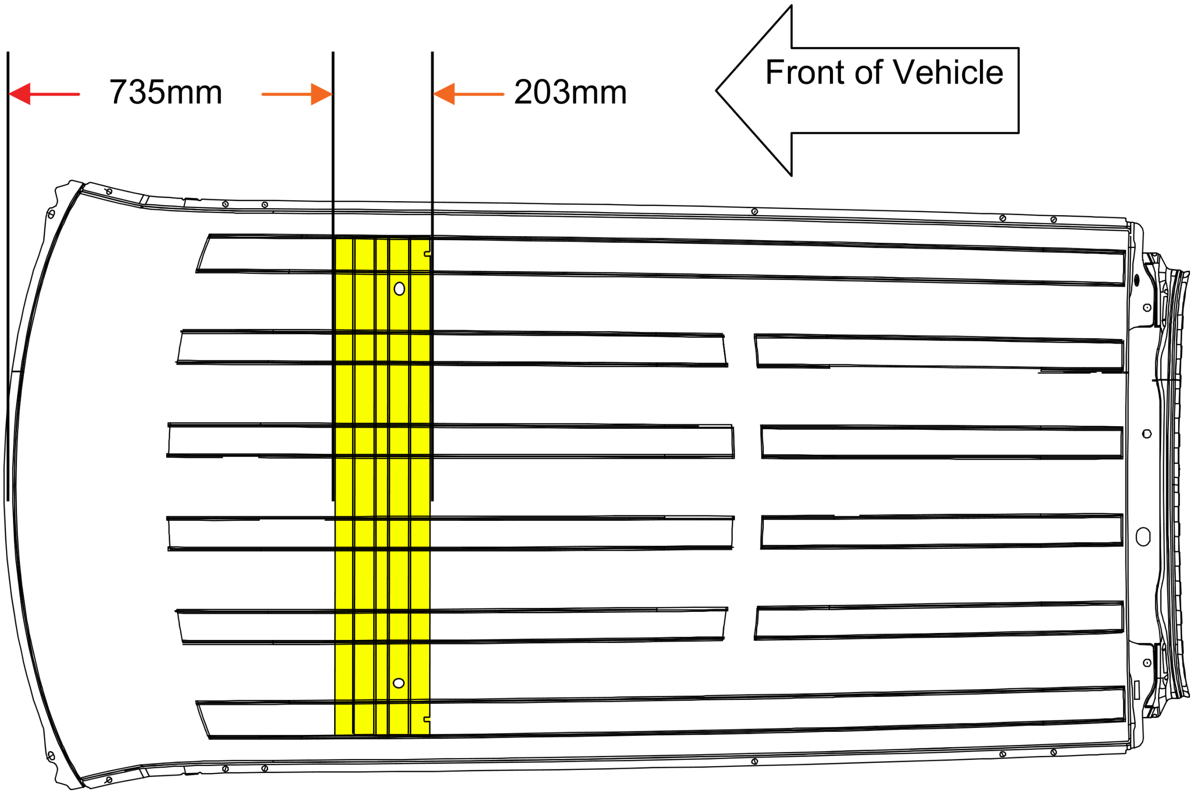

Front of Vehicle
622mm
179mm

N0146529

Utility Interceptor Light Bar Installation Considerations

Approximate location of roof bow.

Section 3: Installation Considerations



N0146528

Seat Bolts

The vehicle safety belts and seat assemblies are factory installed in their correct locations. Seat attaching bolts are not to be used as attachment points for any equipment. Any added material between the seat bolt and the seat frame could have unpredictable effects on the seat bolt torque. If the safety belts are removed for any reason, all of the appropriate attaching hardware must be hand started and then tightened to the correct torque specifications as per the workshop manual. Proper operation must be verified before returning the vehicle to service.

Driveshaft Clearance

When installing police equipment such as a console or other equipment in the console area, it is important to consider the available clearance between the underbody and the driveshaft. Never use self-tapping screws and never use screws that are longer than necessary in the console area.

Accessory Bracket

The accessory bracket must not be removed from the vehicle. Both the Sedan Interceptor and Utility Interceptor were developed with the accessory bracket.

High Strength Steel

High strength Boron steel is used in the A and B pillars of both the Sedan Interceptor and Utility Interceptor vehicles. Welding and other repair processes should not be performed.

Electrical

Park Signal

NOTICE:

Section 3: Installation Considerations

Do not splice in this circuit with 12 volts or a ground signal as damage to the vehicle starting system will occur.

NOTE:
The Park position signal can only be monitored with a 5-volt reference signal. When the vehicle is in PARK or NEUTRAL, the reference voltage is grounded through the starter relay control side (reference voltage drops to low). When the vehicle is not in PARK or NEUTRAL, the circuit is open and the reference voltage remains high.

In the event that the police equipment to be installed requires a PARK signal, it can be accessed at the 14 way base signal power connector (pin 12) as illustrated in the Wiring Diagram manual.

Vehicle Speed Signal

NOTICE:
Do not make electrical connections to vehicle electrical systems not specifically designed for police equipment installations.

When adding police equipment that requires a vehicle speed signal input, such as VASCAR, use the available vehicle speed signal connection in the 14 way base signal power connector (pin 9). This is the only recommended access to the vehicle speed signal. For additional information on the vehicle speed signal, refer to the Wiring Diagrams manual.

Speed Signal Characteristics

NOTE:
Changes in tire sizes from that supplied with the vehicle can vary the pulse count and result in inaccurate speed calculations.

The vehicle speed signal is a DC-coupled square wave that varies in frequency in proportion to vehicle speed. The characteristics of the square wave are detailed below.

- Maximum High Signal (VBAT): Battery Voltage
- Minimum High Signal (VBAT): 3.67 Volts
- Maximum Low Signal: 1.1 Volts
- Minimum Low Signal: -1.0 Volt
- Maximum Ground Offset: ±1.0 Volt
- Rise Time (t_r): 10 μ sec less than or equal to t_r less than or equal to 250 μ sec
- Fall Time (t_f): 10 μ sec less than or equal to t_f less than or equal to 250 μ sec
- Duty Cycle: 50% ± 10%
- Pulse Rate: 1.3808 Hz/kph (2.22 Hz/mph)

Driver Door Ajar

NOTICE:
Do not make electrical connections to vehicle electrical systems not specifically designed for police equipment installations.

When adding police equipment that requires a door ajar signal input, use the available vehicle speed signal connection from the 14-way connector located behind the valence panel at the bottom of the electronic finish panel where the driveline tunnel meets the instrument panel. This is the only recommended access to the door ajar signal.

Transmission Sensors

The 6F50 automatic transmission is used on a majority of retail Sedan and Utility Interceptor retail applications, however, some applications use the 6F55 transmission. All retail Sedan and Utility Interceptor vehicles are equipped with a heavy-duty transmission cooler. The police interceptor transmission is unique in the following areas:

- Torque converter
- PCM programming to produce unique transmission shift characteristics
- Auxiliary transmission cooler

Mobile communication systems may harm the operation of a vehicle, particularly if they are not properly designed for automotive use or are not properly installed. For example, when operated, such systems may cause the engine to stumble or stall and may affect the automatic transmission operation. Citizen band (CB) transceivers, garage door openers, and other transmitters whose power output is 5 watts or less will not ordinarily affect the operation of the vehicle.

Section 3: Installation Considerations

Delay Accessory

All Sedan Police Interceptors and Utility Police Interceptors are equipped with delay accessory feature, which is a function of the Body Control Module (BCM). The delay accessory feature disrupts power to the interior lamps and demand lamps after 10 minutes or immediately upon opening the door. Interior lamps include the dome lamps and the instrument cluster lamps. Demand lamps include the front map lamp, glove compartment lamp, luggage compartment lamp and engine compartment lamp. Turning the ignition switch to the RUN or ACC position terminates the battery saver feature by disabling the interrupt timers and power to the lamps.

A reset event sets the interior lamps interrupt timer to 0. The reset events for the interior lamps interrupt timer are turning on the interior lamps by using the dome lamp switch or opening any door (as detected by the door ajar switches).

A reset event sets the demand lamps interrupt timer to 0. The reset events for the demand lamps interrupt timer are opening the luggage compartment door or opening any door (as detected by the door ajar switches).

Spot Lamp Installation - Sedan and Utility Police Interceptors

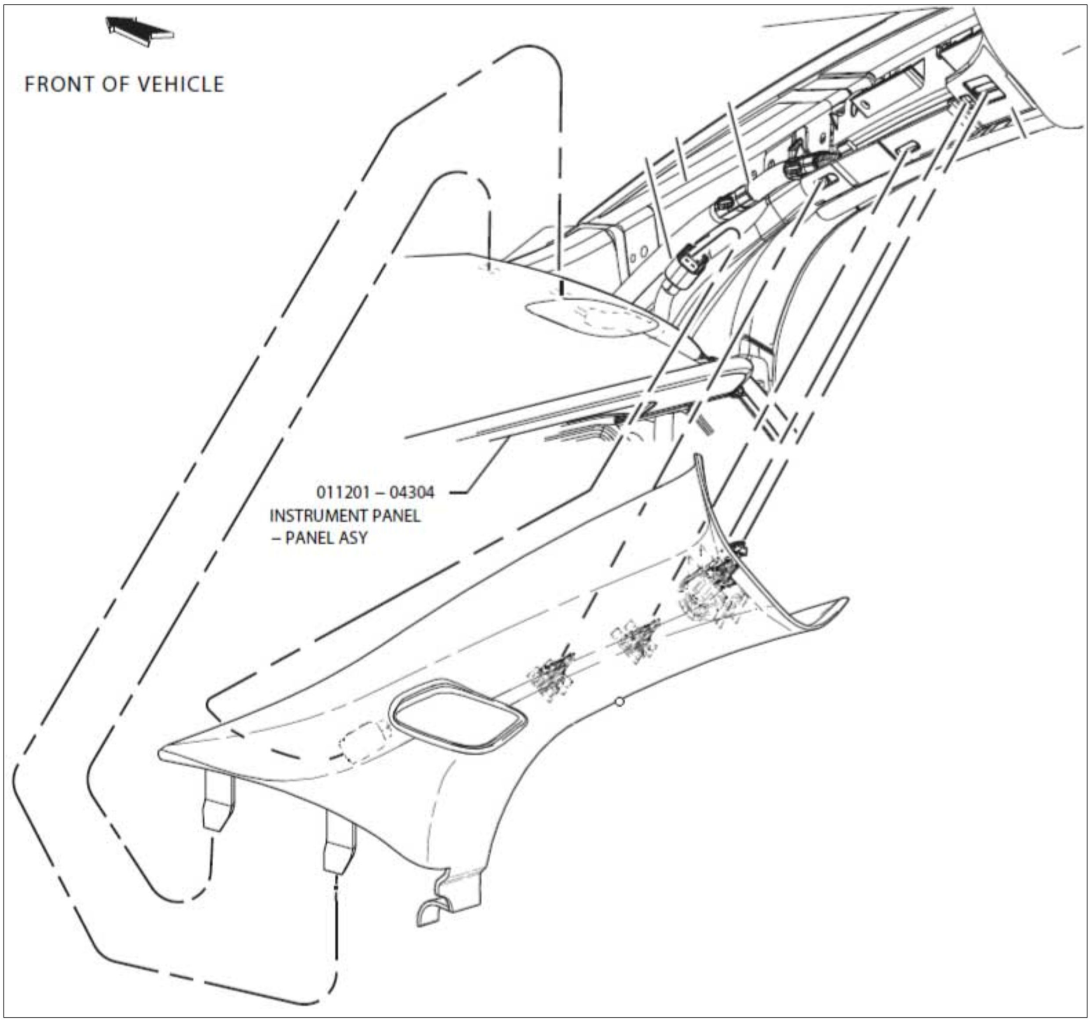
NOTE:
The following steps apply to both the RH and LH side of the vehicle.

1. Wearing latex gloves, grasp the A pillar trim cover at the top and pull inboard to release the trim retention clips from the pillar, continue to work down until all 3 retention clips are released. Once all three clips are released continue to pull the trim inboard while lifting up on the trim to release the guide/alignment tabs from the top of the instrument panel. Disconnect any electrical connectors connected to the trim. Repeat process for remaining A-pillar trim.

NOTE:
Metal retention clips may remain in the sheet metal, use needle nose pliers to remove and reinstall back on to the plastic trim.

2. Obtain the protective cover, install the cover over the top of the instrument panel tuck the cover into the right or left hand side to prevent metal chips from damaging the instrument panel during drilling.

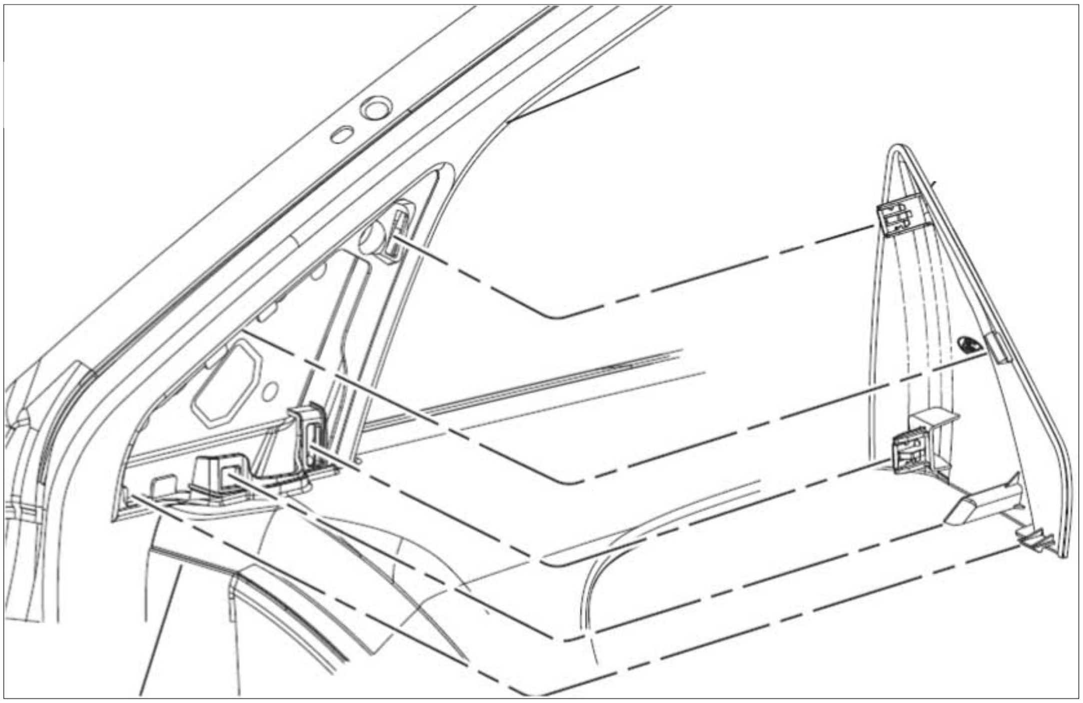
Section 3: Installation Considerations


FRONT OF VEHICLE
011201 – 04304
INSTRUMENT PANEL
– PANEL ASY

N0140590

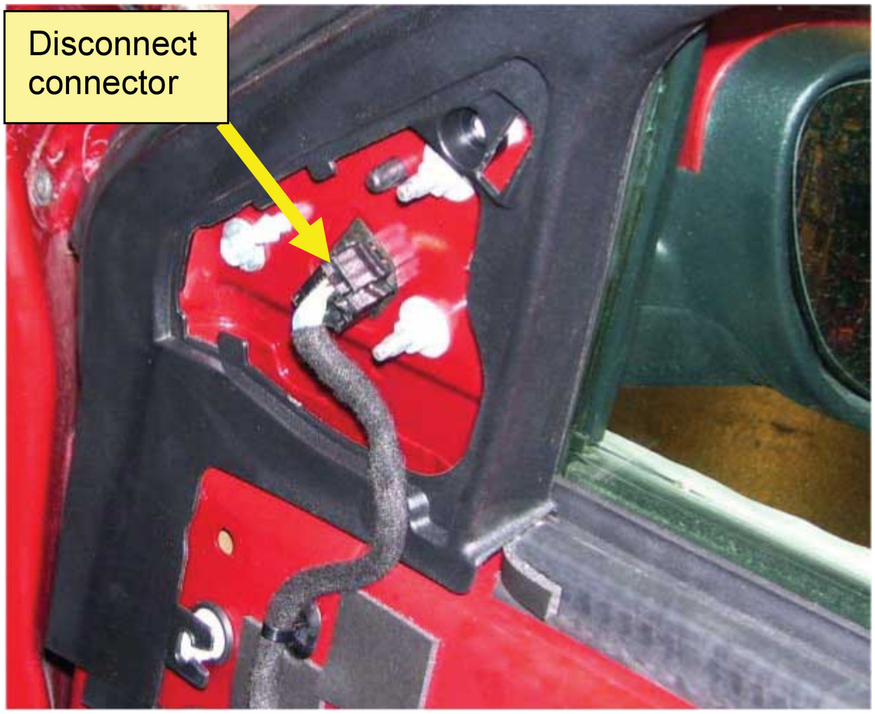
3. Using a fiber stick, gently pry back on the outside mirror cover, grasp the cover with your hands and pull the cover straight off to release the clips. Place cover on parts cart for reinstallation.

Section 3: Installation Considerations



N0140591

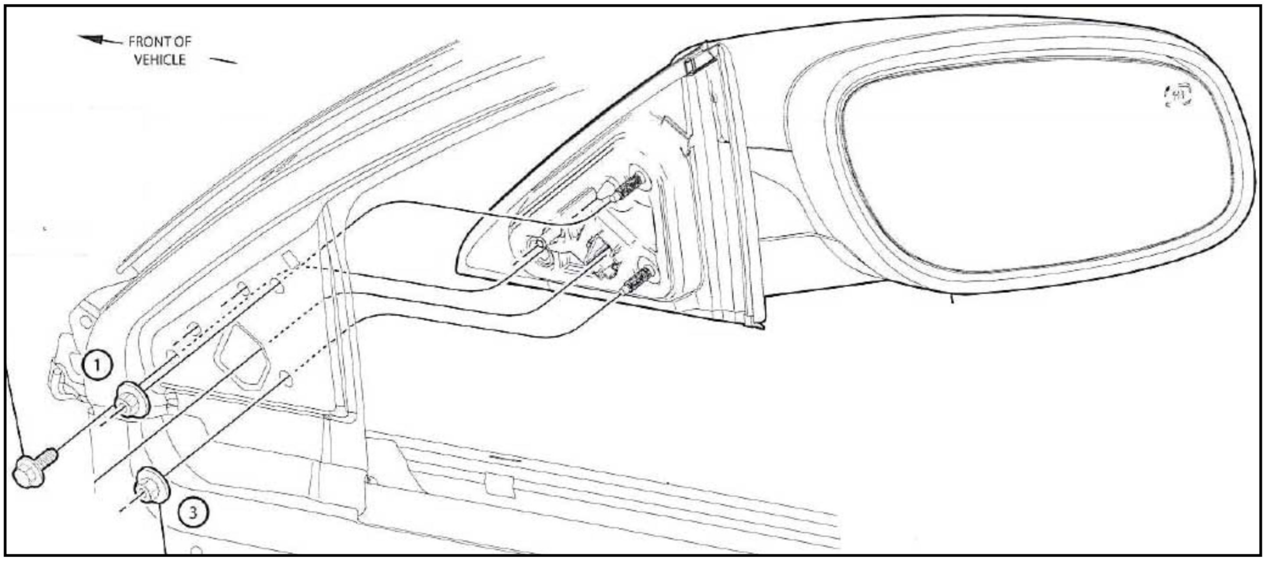
4. Locate the mirror electrical connector, disconnect connector.



N0140592

5. Remove the 3 nuts retaining the mirror to the door. Grasp the mirror and slide it rearward and out to remove from the door. Wrap the mirror in bubble wrap or similar material and place it and retaining nuts on a parts cart for reinstallation.

Section 3: Installation Considerations



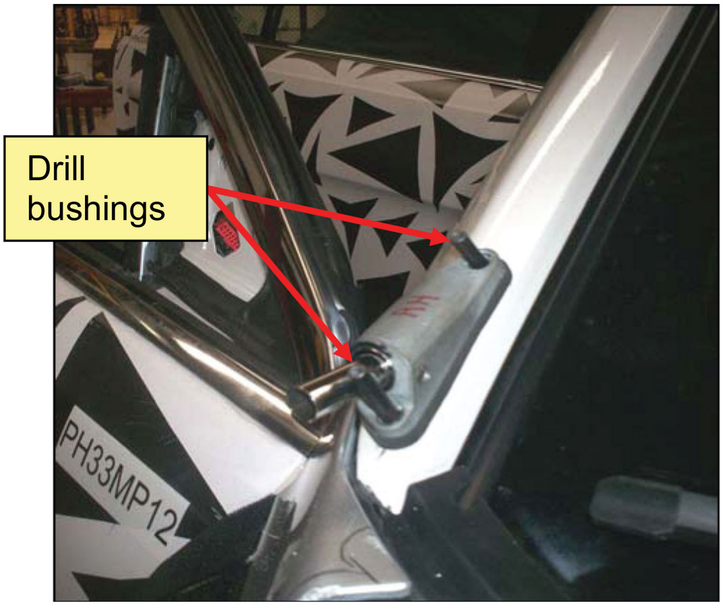
N0140610

6. Open the hood, disconnect the negative battery cable.
7. Wrap guard the RH / LH front doors, top of the hood, and the A-pillar.
8. Drill through the A-pillar (do not force the drill bit through, allow the bit to slowly cut through) from the outside to the inside of the vehicle. Once through the first layer of sheet metal, slow down until contact is made with the second layer of metal, continue slowly and at a steady pace. Repeat process on the other side of the vehicle.
9. Install the spot lamp shaft from the outside of the vehicle through the previously drilled hole and into the inside of the vehicle.

NOTE:
The shaft should move freely through the hole in the A-pillar while sliding it in and out. If the shaft binds at all, remove the shaft.

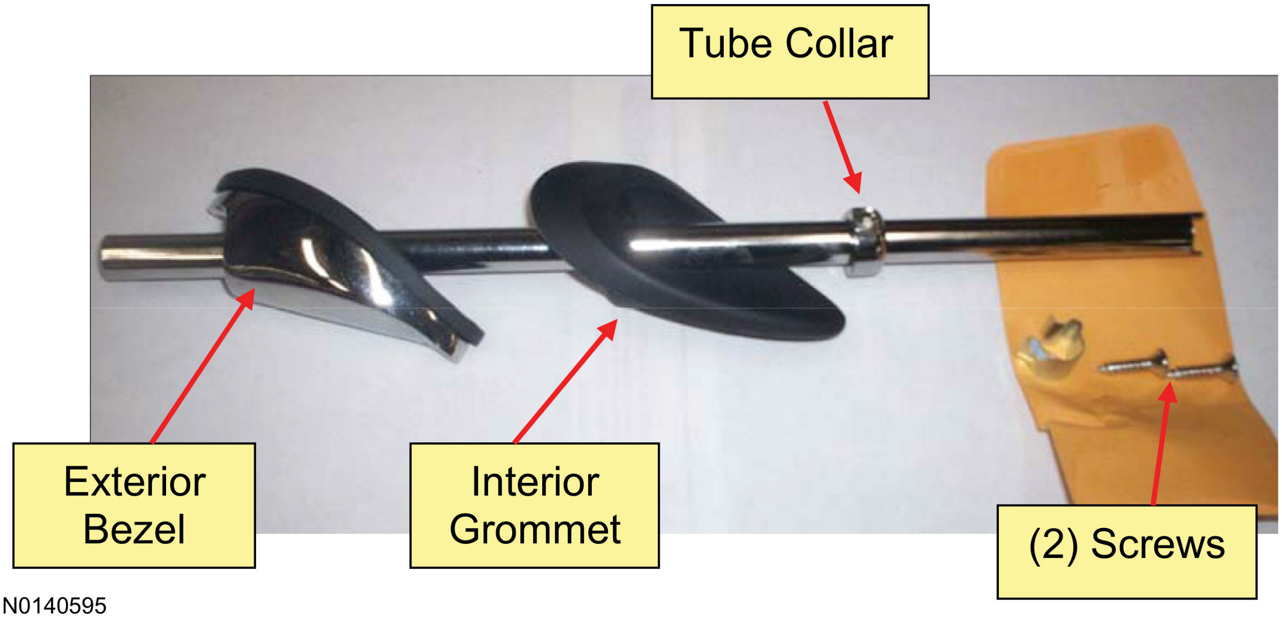
10. If the test shaft binds use a pencil grinder and begin to remove any burrs from both the inside and outside of the A-pillar. Repeat the process until the shaft slides through the hole without binding.
11. Obtain spot lamp bezel drill fixture and make sure there are no metal chips on the exterior of the A-pillar and ensure the rubber gasket is attached to the fixture and install the shaft on the fixture through the previously drilled A-pillar hole.
12. Protect the A-pillar. Hold fixture tight to the A-pillar and drill an 1/8 inch hole through the bushings in the fixture and into the first layer of metal. Remove fixture.

Section 3: Installation Considerations


Drill bushings
PH33MP12
RH

N0140593

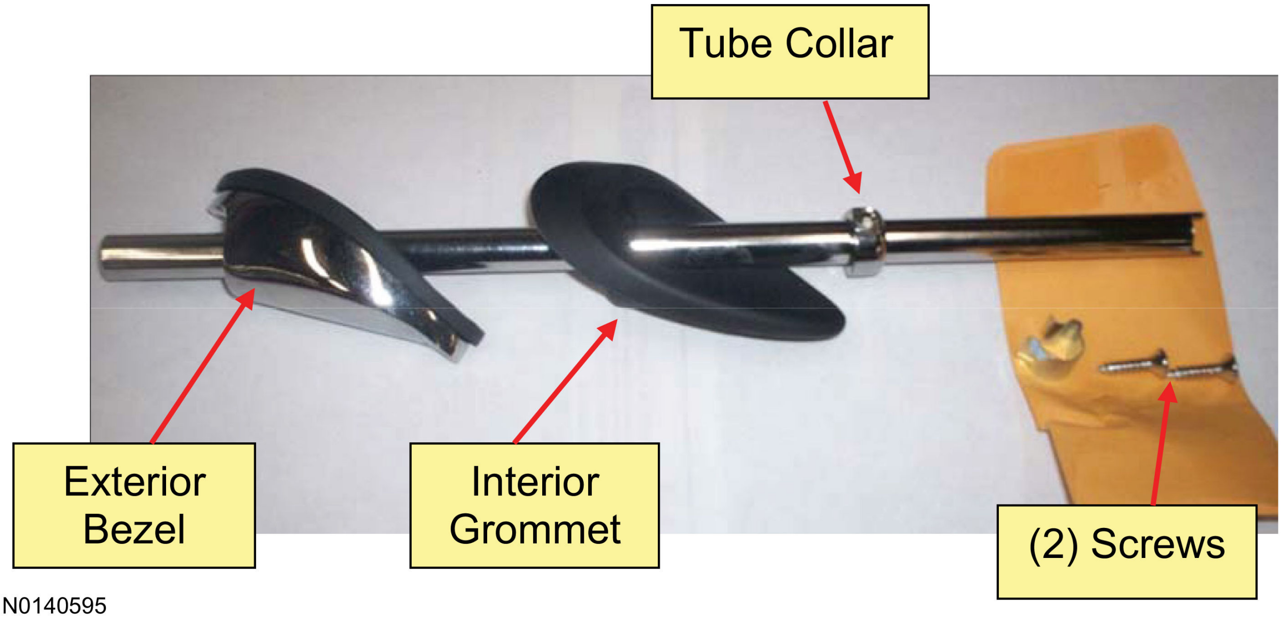
13. De-burr the previously drilled holes. Use PM-13 on all bare metal.
14. Gather the RH spot lamp assembly (See build router for correct P/N) and installation kit P/N DG1315301AB. The installation kit will include, tube sleeve, exterior bezel with rubber gasket, interior A-pillar grommet, tube collar locking ring, 2 screws and wire harness retainer.


Tube Collar
Exterior Bezel
Interior Grommet
(2) Screws

N0140595

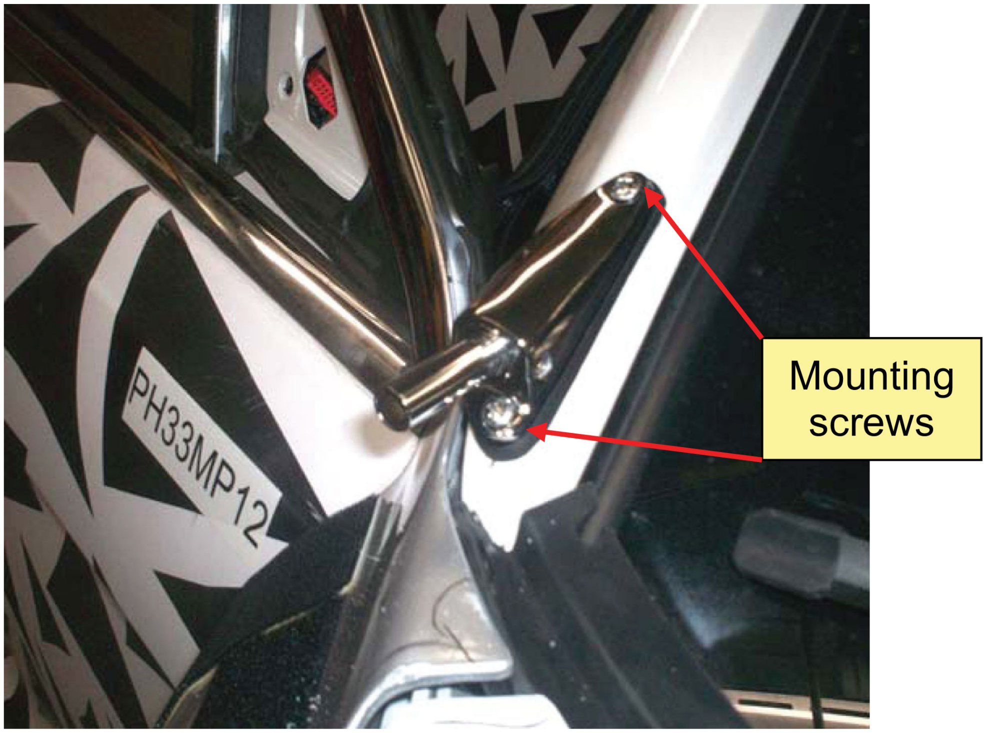
15. Gather the exterior tube sleeve and loosen the Allen set screw on the tube collar locking ring. Remove and retain the locking ring and the interior A-pillar grommet. Retain all parts.

Section 3: Installation Considerations



N0140595

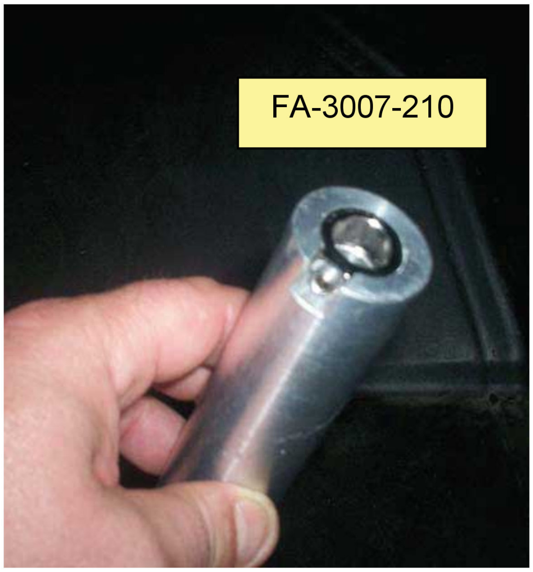
16. Retrieve the exterior mounting bezel / tube sleeve and 2 mounting screws from the outside of the vehicle. Slide the tube sleeve into the A-pillar hole and into the inside of the vehicle.
17. Align the screw holes in the bezel to the corresponding holes in the outside of the A-pillar, from the kit and install 2 screws to retain the bezel to the pillar as shown.



N0140596

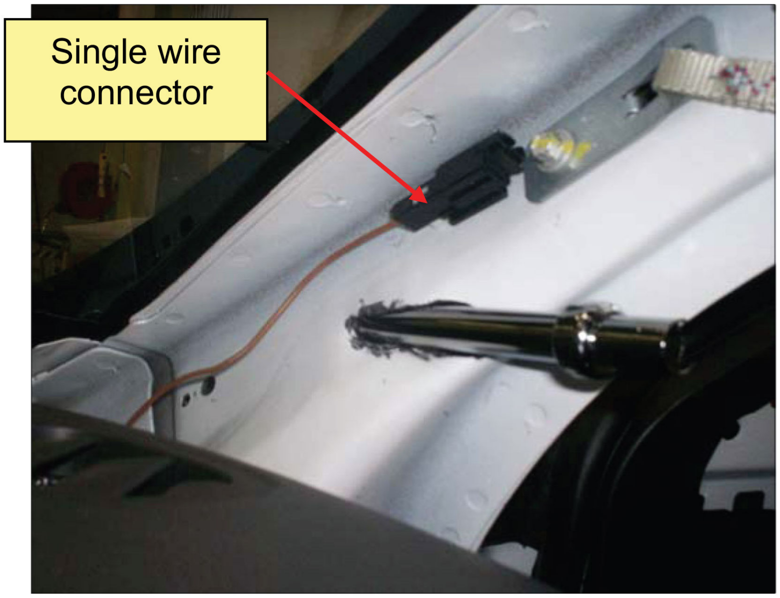
18. Obtain the RH / LH FA-3007-210 collar depth tool and the collar from the kit. Install the collar into the end of the tool as shown from the inside of the vehicle. Slide the tool onto the end of tube sleeve with the set screw pointing to the outside of the vehicle. Using an Allen wrench, securely tighten the set screw. Remove depth tool.

Section 3: Installation Considerations



N0140597

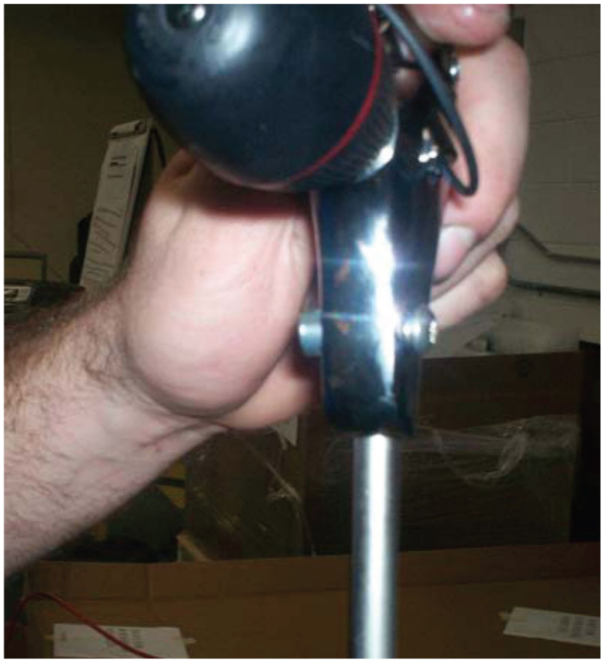
19. On the inside of the A-pillar, locate the single wire connector as shown. Remove the dummy plug from the connector by pressing the tab on the plug and removing the plug from the connector, discard plug.



N0140598

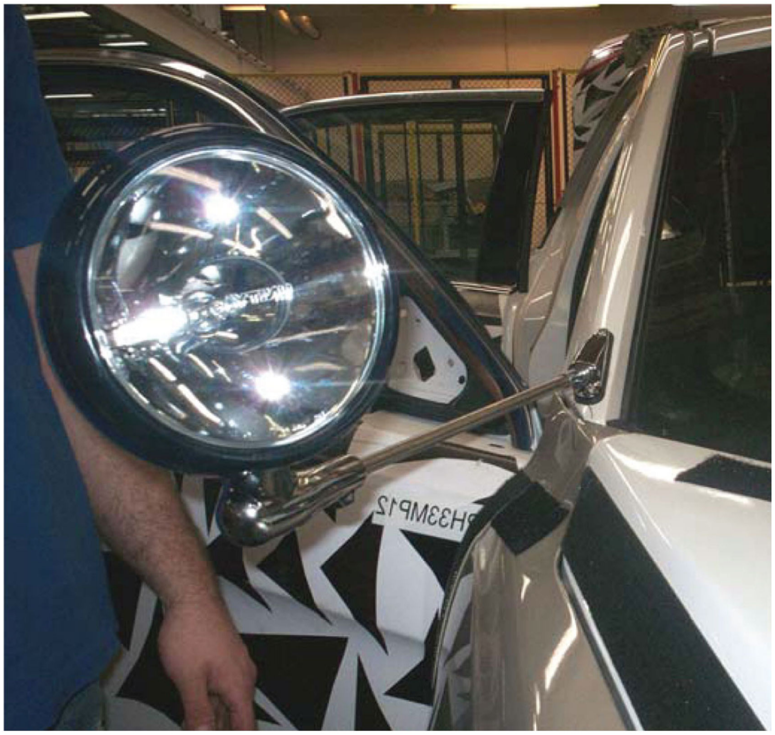
20. Spot lamp assembly. On the handle end remove the screw and wedge retaining the handle to the shaft. Retain screw and wedge for reinstall.

Section 3: Installation Considerations



N0140599

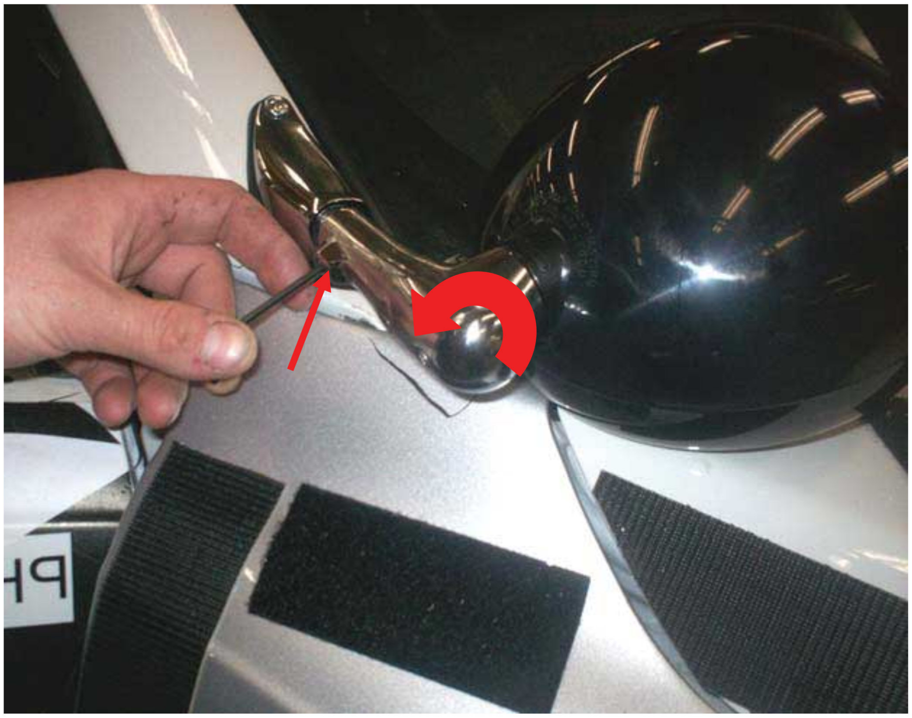
21. Insert the shaft of the spot lamp into the previously installed tube sleeve. Continue to push in until it snaps / seats into the bezel.



N0140600

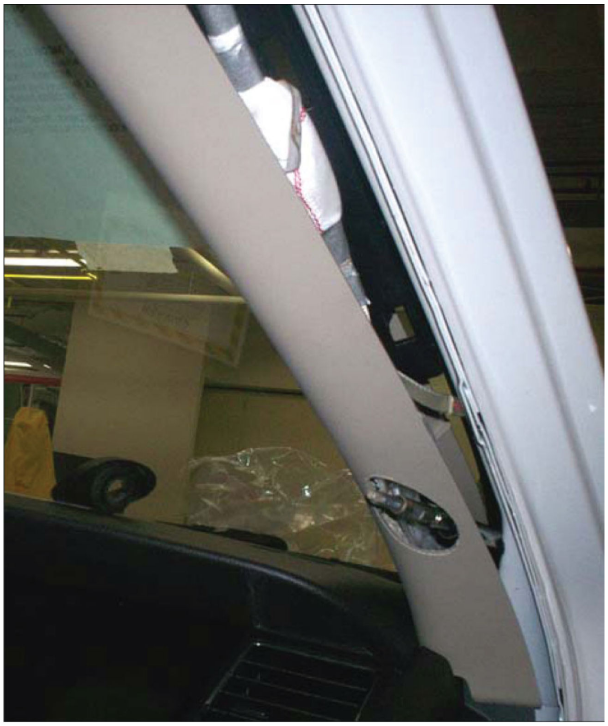
22. Tighten the hex set screw on the end of the chrome lamp housing, tighten enough to create light tension while rotating the spot lamp from left to right.

Section 3: Installation Considerations



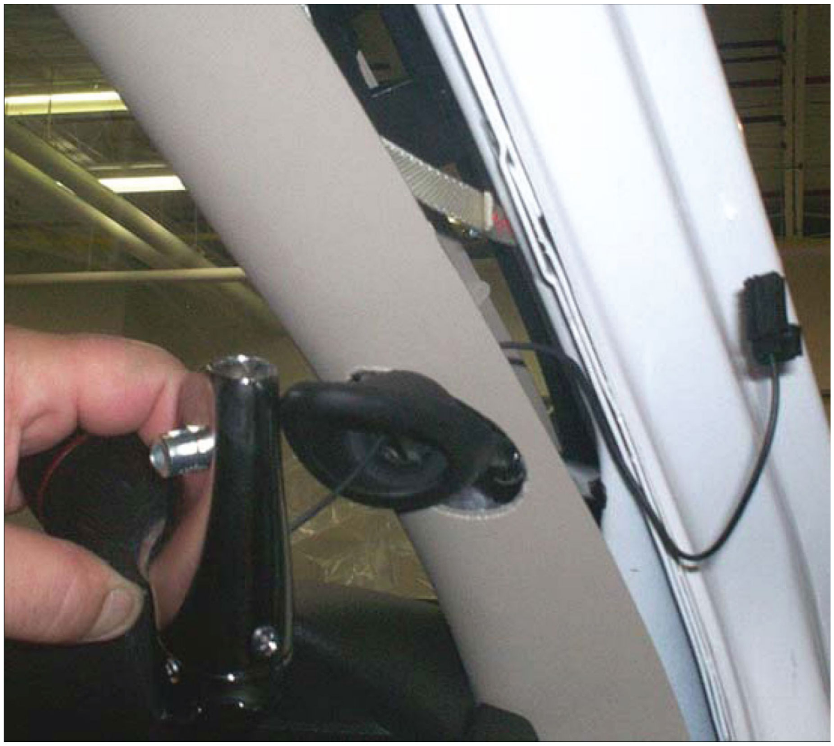
N0140601

23. Gather spot lamp handle, screw, wedge, grommet and A- pillar trim. Install the A-pillar trim over the spot lamp shaft sticking out of the A-pillar. Feed the harness on the end of the spot lamp handle through the rubber grommet and through the A-pillar.



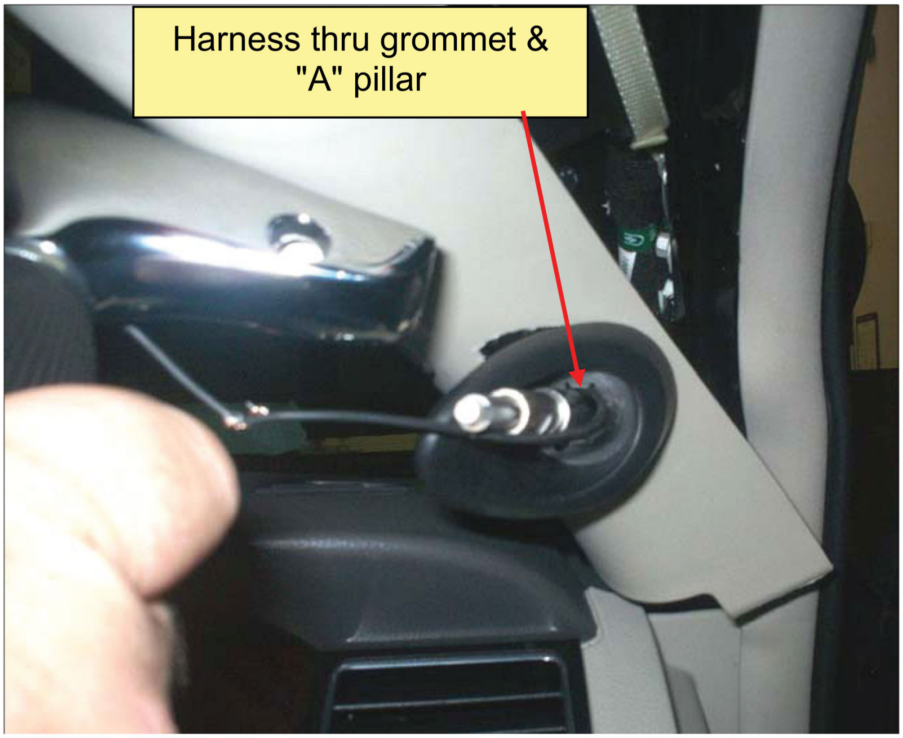
N0140602

Section 3: Installation Considerations



N0140603

24. With harness through the grommet and the A-pillar trim, connect the connector to the existing mating connector on the inside of the A-pillar as shown.

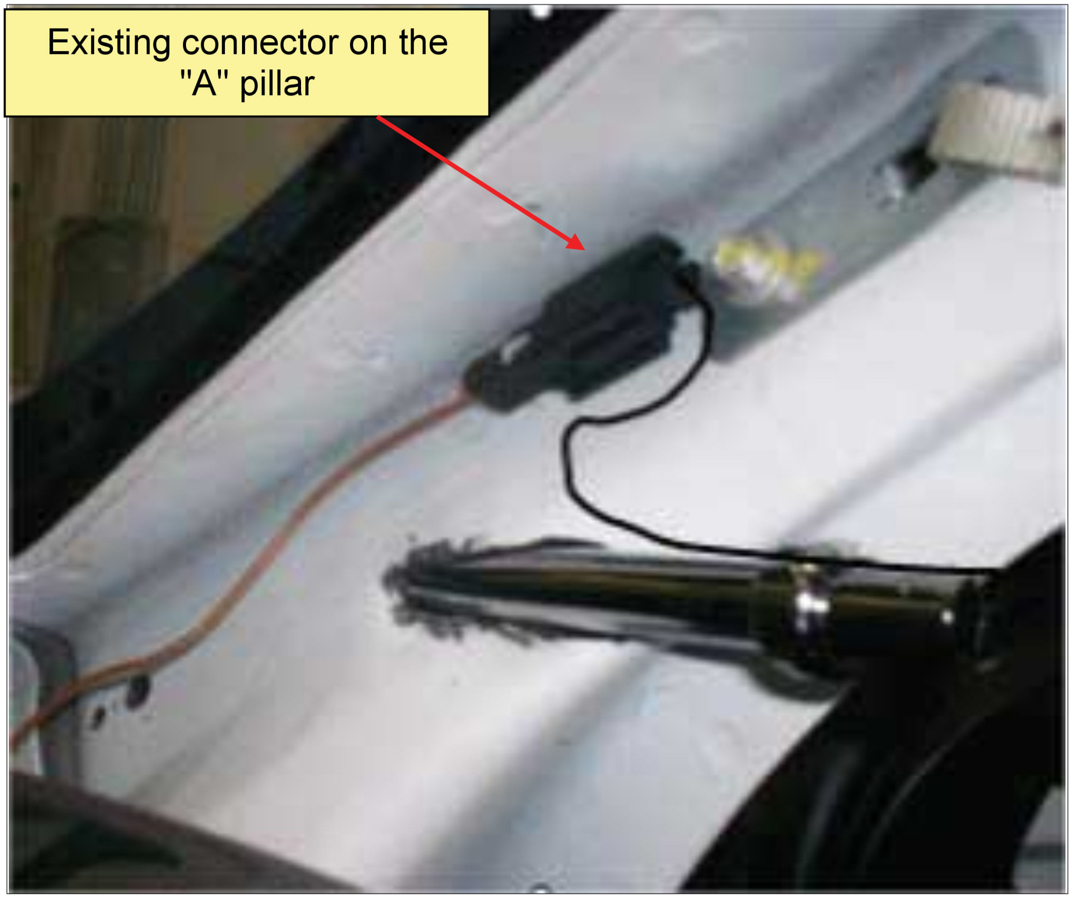


N0140604

Section 3: Installation Considerations

25. Install the handle onto the shaft. Rotate the handle on the shaft side to side while pushing forward until the flat on the shaft aligns to the flat on the inside of the handle.

NOTE:
When the flats are aligned, the handle will move fully forward and stop.



N0140611

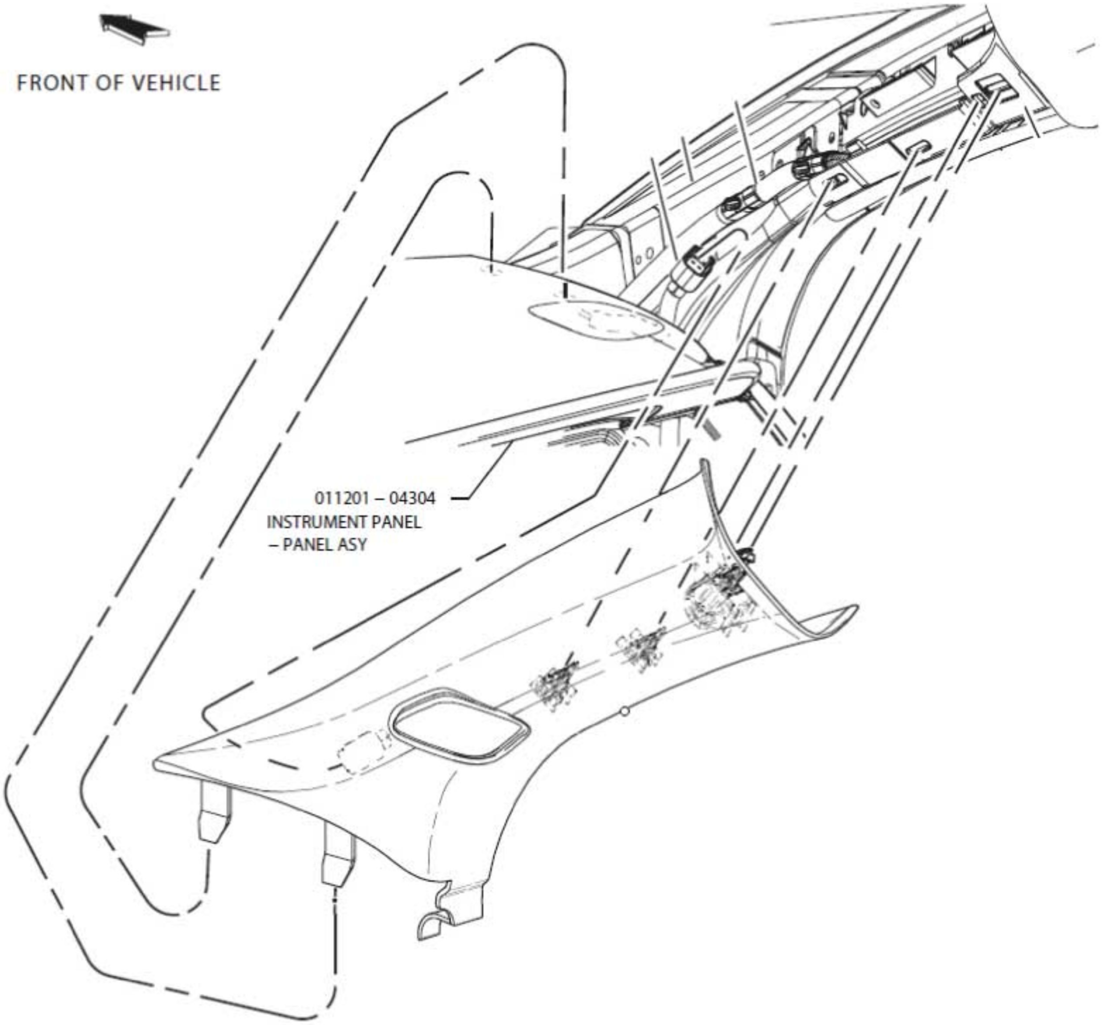
26. With the handle fully installed on the shaft, reinstall the wedge into the handle hole and move the handle left to right as needed to fully seat the wedge. Once the wedge is seated, reinstall the previously removed screw by hand until secure. Tighten the screw to 7 ± 1Nm

Section 3: Installation Considerations

N0140613

27. Grasp the A-pillar trim insert the bottom end in first. Align the tabs on the pillar trim to the corresponding slots in the top of the instrument panel, align the 3 retention clips on the pillar trim to the corresponding slots in the sheet metal and snap the cover into position.

Section 3: Installation Considerations



N0140605

The 6F50 automatic transmission is used on all retail Taurus and Explorer retail applications. All retail Taurus and Explorer vehicles are equipped with a heavy-duty transmission cooler. The police interceptor transmission is unique in the following areas:

28. Push the rubber grommet over the collar on the spot lamp shaft and into the previously routed hole in the A-pillar. Continue to fit the grommet around the periphery of the hole until the grommet is fully seated in the A-pillar trim without any gaps.

Section 3: Installation Considerations

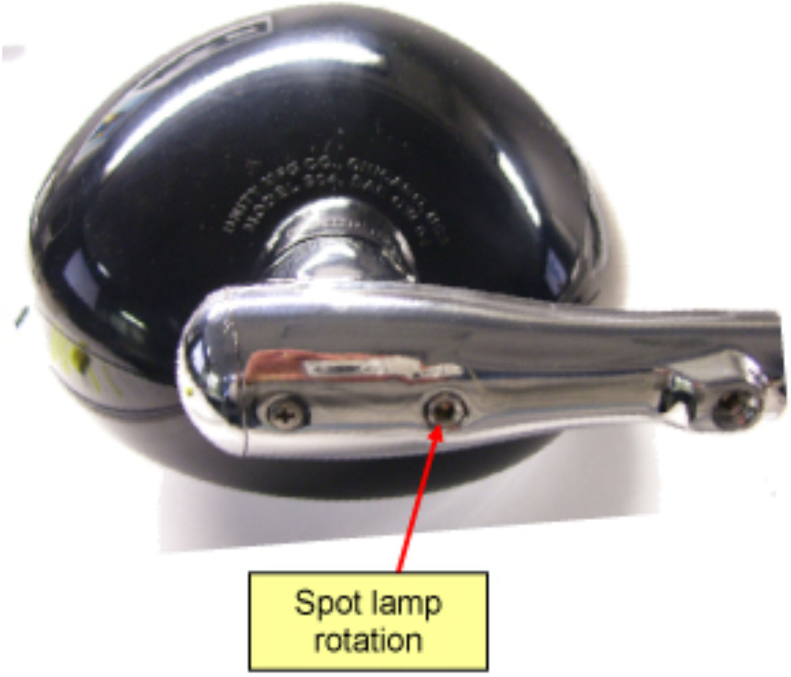
N0140606

29. Ensure door weather seal is not trapped under the A-pillar. If it is, pull the weatherstrip out and over the top of the A pillar trim.
30. Open hood and reconnect negative battery cable. Tighten cable fastener to 9 ± 1.4 Nm paint mark, close hood.

Section 3: Installation Considerations

N0140612

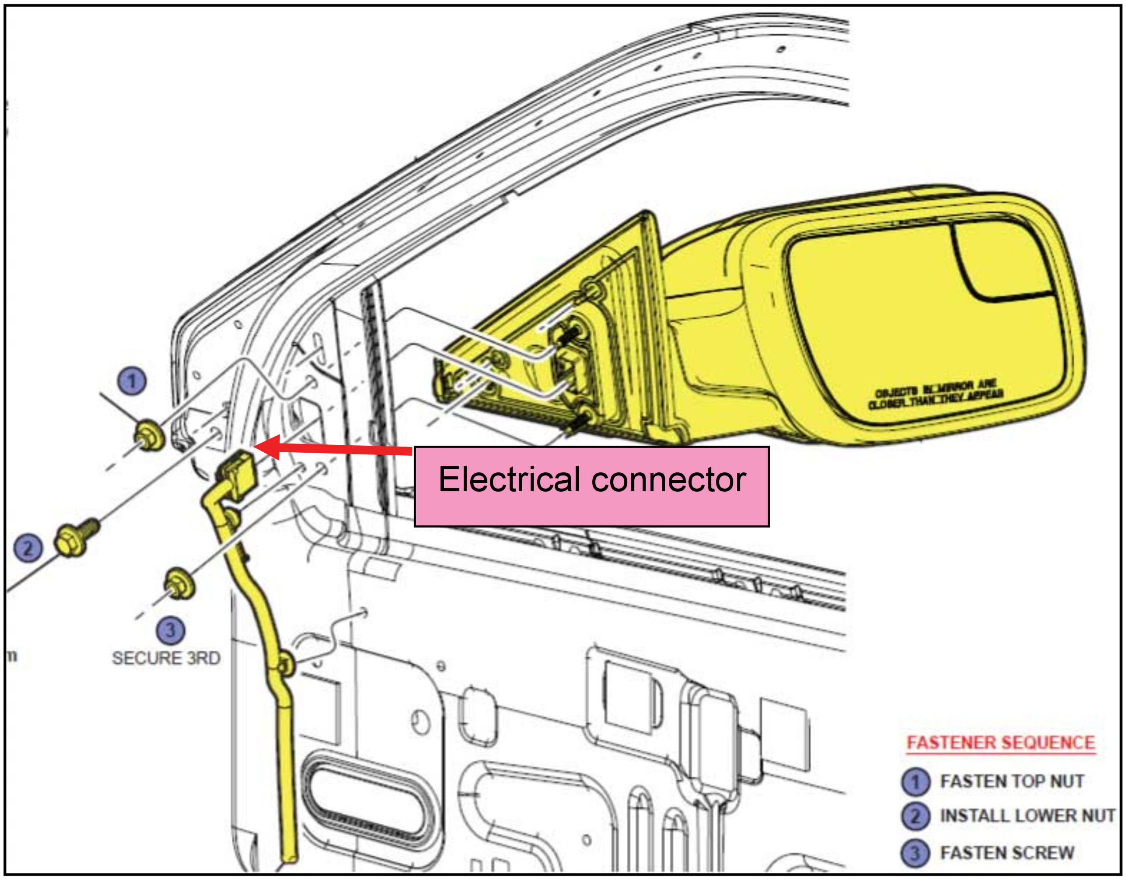
31. With the battery reconnected, turn both the RH / LH spot lamps on to test function.
32. Check spot lamp rotation by twisting the spot lamp handle. It is difficult to rotate the spot lamp from side to side smoothly, use a hex wrench to loosen the set screw on the bottom of the lamp only loosen a 1/4 turn at a time and recheck function.



N0140607

Section 3: Installation Considerations

33. Obtain the mirror from the parts cart and align the studs on the mirror into the corresponding holes in the door. Slide the mirror forward and then inboard to temporarily secure.
34. Using a ratchet and a 10 mm socket, hand start the 2 nuts and 1 bolt retaining the mirror to the door. Tighten the 3 fasteners to 10.5 ± 1.6 Nm in the sequence shown:
35. Reconnect 1 electrical connector to the mirror. Use the push-click-pull technique to make sure the connector is secure.



N0140608

36. Retrieve the previously removed outside mirror cover. Align the clips on the cover to the matching slots in the door and push the cover in to secure. Make sure all clips are secure.

Vehicle Loading With and Without a Trailer

This section will guide you in the proper loading of your vehicle and/or trailer. To keep your loaded vehicle weight within its design rating capability, with or without a trailer. Properly loading your vehicle will provide maximum return of vehicle design performance. Before loading your vehicle, familiarize yourself with the following terms for determining your vehicle's weight ratings, with or without a trailer from the Vehicle's Tire Label or Safety Compliance Certification Label.

Base Curb Weight

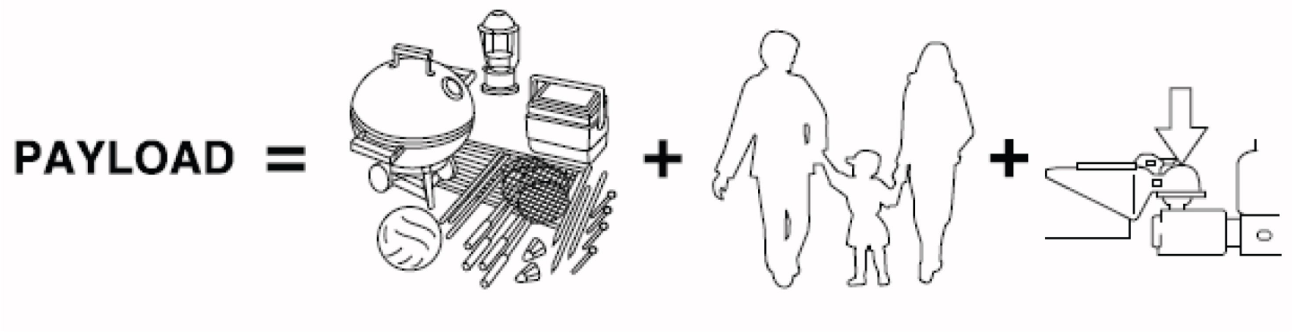
The weight of the vehicle including a full fuel tank of fuel and all standard equipment. It does not include passengers, cargo, or optional equipment.

Base Curb Weight is the weight of the vehicle including a full fuel tank of fuel and all standard equipment. It does not include passengers, cargo, or optional equipment.

Vehicle Curb Weight

The weight of your new vehicle when you picked it up from your authorized dealer plus any aftermarket equipment.

Section 3: Installation Considerations



N0140566

Payload

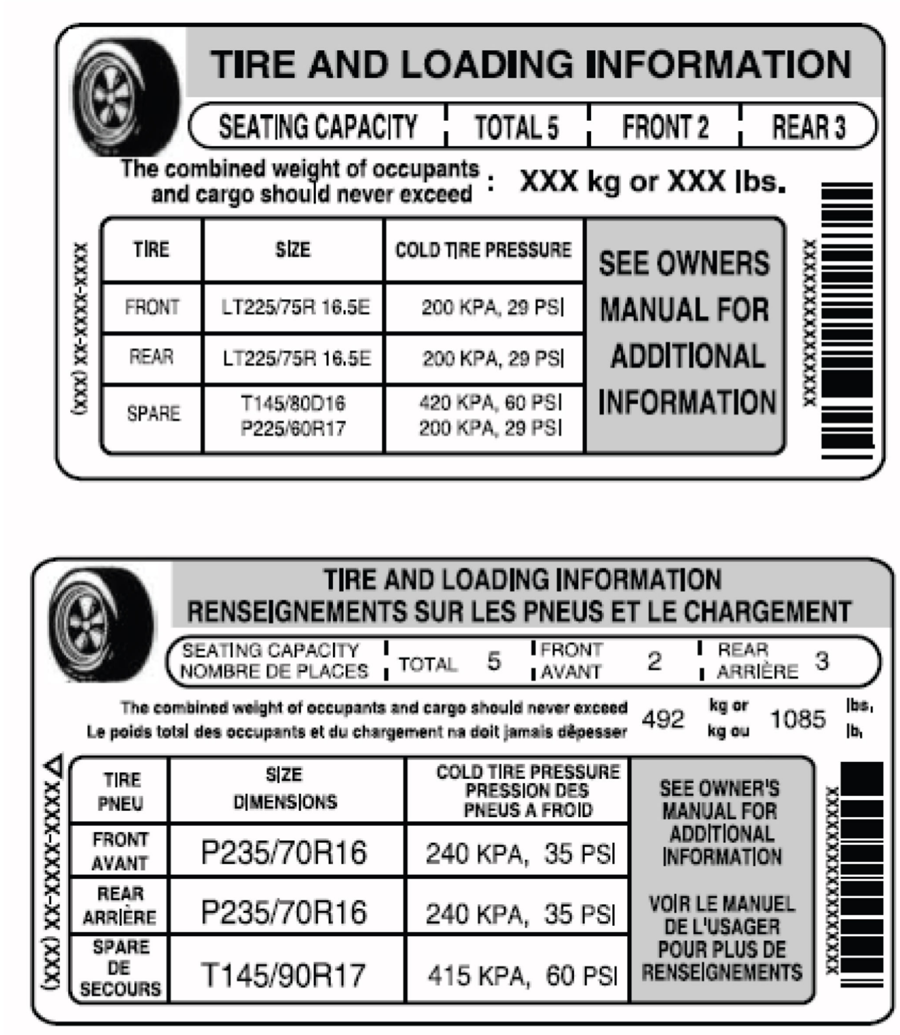
The combined weight of cargo and passengers that the vehicle is carrying. The maximum payload for your vehicle can be found on the Tire Label on the B-Pillar of the edge of the driver's door (vehicles exported outside of the US and Canada may not have a Tire Label). Look for **The Combined Weight Of Occupants And Cargo Should Never Exceed xxx kg Or xxx lb.** for maximum payload. The payload listed on the Tire Label is the maximum payload for the vehicle as built by the assembly plant. If any aftermarket or authorized dealer installed equipment must be subtracted from the payload listed on the Tire Label in order to determine the new payload.

⚠ **WARNING:**

The appropriate loading capacity of your vehicle can be limited either by volume capacity (how much space is available) or by payload capacity (how much weight the vehicle should carry). Once you have reached the maximum payload of your vehicle, do not add more cargo, even if there is space available. Overloading or improperly loading your vehicle can contribute to loss of vehicle control and vehicle rollover.

Example Only

Section 3: Installation Considerations



TIRE AND LOADING INFORMATION

SEATING CAPACITY	TOTAL 5	FRONT 2	REAR 3

The combined weight of occupants and cargo should never exceed : XXX kg or XXX lbs.

TIRE	SIZE	COLD TIRE PRESSURE	SEE OWNERS MANUAL FOR ADDITIONAL INFORMATION
FRONT	LT225/75R 16.5E	200 KPA, 29 PSI	
REAR	LT225/75R 16.5E	200 KPA, 29 PSI	
SPARE	T145/80D16 P225/60R17	420 KPA, 60 PSI 200 KPA, 29 PSI	

(xxx) xx-xxxx-xxxx

XXXXXXXXXXXXX

TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

SEATING CAPACITY NOMBRE DE PLACES	TOTAL 5	FRONT AVANT 2	REAR ARRIÈRE 3

The combined weight of occupants and cargo should never exceed 492 kg or 1085 lbs.
Le poids total des occupants et du chargement na doit jamais dèpesser 492 kg ou 1085 lb.

TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS A FROID	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
FRONT AVANT	P235/70R16	240 KPA, 35 PSI	
REAR ARRIÈRE	P235/70R16	240 KPA, 35 PSI	
SPARE DE SECOURS	T145/90R17	415 KPA, 60 PSI	

(xxx) xx-xxxx-xxxx ∆

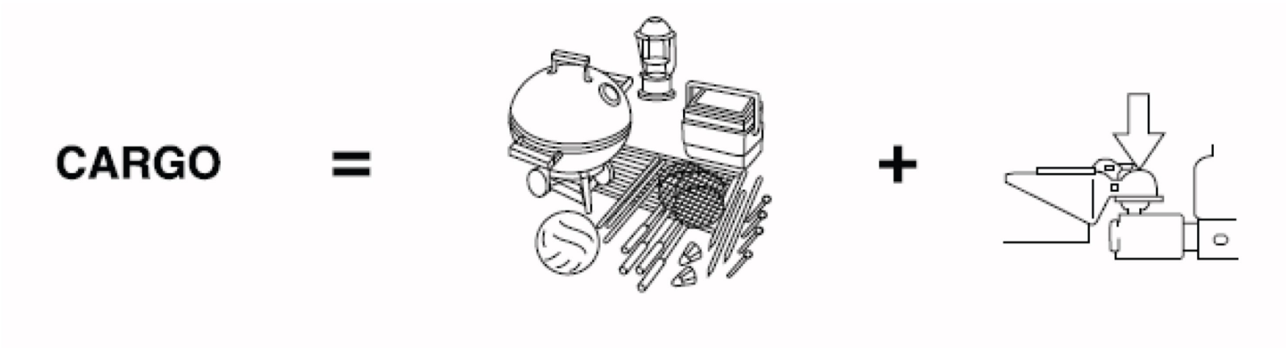
XXXXXXXXXXXXX

N0140565

Cargo Weight

Includes all weight added to the Base Curb Weight, including cargo and optional equipment. When towing, trailer tongue load weight is also part of cargo weight.

Section 3: Installation Considerations



N0140567

Gross Axle Weight (GAW)

The total weight placed on each axle (front and rear) including vehicle curb weight and all payload.

Gross Axle Weight Rating (GAWR)

The maximum allowable weight that can be carried by a single axle (front or rear). **These numbers are shown 011 the Safety Compliance Certification Label located 011 the B-Pillar or the edge of the driver's door. The total load on each axle must never exceed its GAWR.**

NOTE:
For trailer towing information, refer to Trailer Towing found in this chapter or the RV and Trailer Towing Guide provided by your authorized dealer.

Gross Vehicle Weight (GVW)

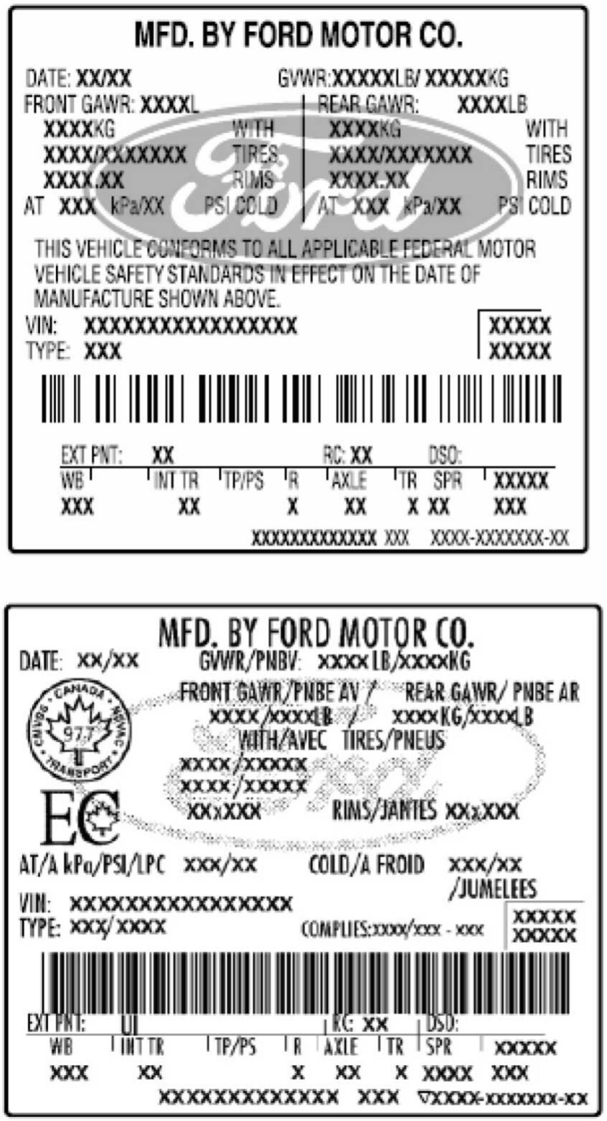
the Vehicle Curb Weight + cargo + passengers.

Gross Vehicle Weight Rating (GVWR)

The maximum allowable weight of the fully loaded vehicle (including all options, equipment, passengers and cargo). **The GVWR is shown on the Safety Compliance Certification Label located on the B-Pillar or the edge of the driver's door. The GVW must never exceed the GVWR.**

Example Only

Section 3: Installation Considerations



MFD. BY FORD MOTOR CO.

DATE: XX/XX GVWR:XXXXXLB/ XXXXXKG

FRONT GAWR: XXXXL
XXXXKG WITH
XXXX/XXXXXXX TIRES
XXXX.XX RIMS
AT XXX kPa/XX PSI COLD

REAR GAWR: XXXXLB
XXXXKG WITH
XXXX/XXXXXXX TIRES
XXXX.XX RIMS
AT XXX kPa/XX PSI COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: XXXXXXXXXXXXXXXXX
TYPE: XXX
XXXXX
XXXXX

EXT PNT: XX RC: XX DSO:

WB	INT TR	TP/PS	R	AXLE	TR	SPR	XXXXX
XXX	XX		X	XX	X	XX	XXX

XXXXXXXXXXXXX XXX XXXX-XXXXXXX-XX

MFD. BY FORD MOTOR CO.

DATE: xx/xx GVWR/PNBV: xxxx LB/xxxxKG

FRONT GAWR/PNBE AV / REAR GAWR/ PNBE AR
xxxx/xxxxLB / xxxxKG/xxxxLB
WITH/AVEC TIRES/PNEUS
xxxx/xxxxx
xxxx/xxxxx
xxxxxx RIMS/JANTES xxxxxx

AT/A kPa/PSI/LPC xxx/xx COLD/A FROID xxx/xx
/JUMELEES

VIN: xxxxxxxxxxxxxxxxx
TYPE: xxx/xxxx COMPLIES:xxxx/xxx - xxx
xxxxx
xxxxx

EXT PNT: UI RC: xx DSO:

WB	INT TR	TP/PS	R	AXLE	TR	SPR	xxxxx
xxx	xx		x	xx	x	xxxx	xxx

xxxxxxxxxxxxx xxx ▽xxxx-xxxxxxx-xx

N0140569

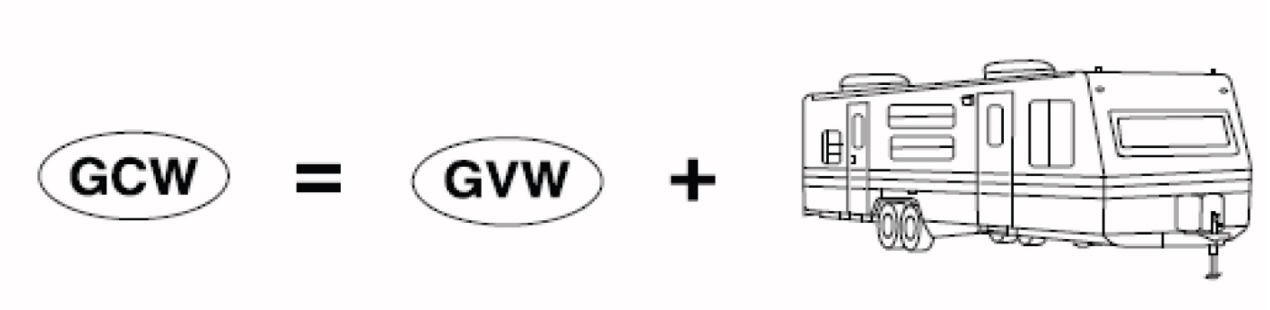
⚠ WARNING:

Exceeding the Safety Compliance Certification Label vehicle weight rating limits could result in substandard vehicle handling or performance, engine, transmission and/or structural damage, serious damage to the vehicle, loss of control and personal injury.

Gross Combined Weight (GCW)

The weight of the loaded vehicle (GCW) plus the weight of the fully loaded trailer.

Section 3: Installation Considerations



N0140568

Gross Combined Weight Rating (GCWR)

The maximum allowable weight of the vehicle and the loaded trailer - including all cargo and passengers - that the vehicle can handle without risking damage. (Important: The towing vehicle's braking system is rated for operation at GVWR, not at GCWR. Separate functional brakes should be used for safe control of towed vehicles and for trailers where the GCW of the towing vehicle plus the trailer exceed the GVWR of the towing vehicle. The GCW must never exceed the GCWR.

Maximum Loaded Trailer Weight

The highest possible weight of a fully loaded trailer the vehicle can tow. It assumes a vehicle with only mandatory options, no cargo (internal or external a tongue load of 10 to 15% (conventional trailer), and driver only (150 lb. JGB kg). Consult your authorized dealer (or the RV and Trailer Towing Guide provided by your authorized dealer) for more detailed information.

⚠ **WARNING:**
Do not exceed the GVWR or the GAWR specified on the Safety Compliance Certification Label.

⚠ **WARNING:**
Do not use replacement tires with lower load carrying capacities than the original tires because they may lower the vehicles GVWR limitations. Replacement tires with a higher limit than the original tires do not increase the GVWR and GAWR limitations.

⚠ **WARNING:**
Exceeding any vehicle weight rating limitation could result in serious damage to the vehicle and/or personal injury.

Steps For Determining The Correct Load Limit:

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX Is." on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX Is.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" equals 1,400 Is. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 Is. (1400-750 (5 x 150) = 650 lbs.). In metric units (635 to 340 (5 x 68) = 295 kg.)
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be lowing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

The following gives you a few examples on how to calculate the available amount of cargo and luggage load capacity:

Section 3: Installation Considerations

- Another example for your vehicle with 1,400 lb. (635 kg) of cargo and luggage capacity. You decide to go golfing. Is there enough load capacity to carry you, 4 of your friends and all the golf bags? You and four friends average 220 lb. (99 kg) each and the golf bags weigh approximately 30 lb. (13.5 kg) each. The calculation would be: 1,400-(5 x 220) -(5 x 30) = 1,400 -1,100 -150 = 150 lb. Yes, you have enough load capacity in your vehicle to transport four friends and your golf bags. In metric units, the calculation would be: 635 kg -(5 x 99 kg) -(5 x 13.5 kg) = 635 -495 -67.5 = 72.5 kg
- A final example for your vehicle with 1,400 lb. (635 kg) of cargo and luggage capacity. You and one of your friends decide to pick up cement from the local home improvement store to finish that patio you have been planning for the past 2 years. Measuring the inside of the vehicle with the rear seat folded down, you have room for 12-100 lb. (45 kg) bags of cement. Do you have enough load capacity to transport the cement to your home? If you and your friend each weigh 220 lb. (99 kg), the calculation would be: 1,400 -(2 x 220) -(12 x 100) = 1,400 -440 -1,200 = -240 lb. No, you do not have enough cargo capacity for that much weight. In metric units, the calculation would be: 635 kg -(2 x 99 kg) -(12 x 45 kg) = 635 -198 -540 = -103 kg. You will need to reduce the load weight by at least 240 lb. 004 kg). If you remove 3-100 lb. (45 kg) cement bags, then the load calculation would be: 1,400 -(2 x 220) -(9 x 100) = 1,400 -440 -900 = 60 lb. Now you have the load capacity to transport the cement and your friend home. In metric units, the calculation would be: 635 kg -(2 x 99 kg) -(9 x 45 kg) = 635 -198 -405 = 32 kg.

The above calculations also assume that the loads are positioned in your vehicle in a manner that does not overload the Front or the Rear Gross Axle Weight Rating specified for your vehicle on the Safety Compliance Certification Label. The label shall be affixed to either the door hinge pillar door latch post, or the door edge that meets the door-latch post, next to the driver's seating position.

⚠ WARNING:

Loaded vehicles may handle differently than unloaded vehicles. Extra precautions, such as slower speeds and increased stopping distance, should be taken when driving a heavily loaded vehicle.

⚠ WARNING:

Do not exceed the GVWR or the GAWR specified on the certification label.

⚠ WARNING:

Towing trailers beyond the maximum recommended gross trailer weight exceeds the limit of the vehicle and could result in engine damage, transmission damage, structural damage, loss of vehicle control, vehicle rollover and personal injury.

Your vehicle's load capacity is designated by weight, not by volume, so you cannot necessarily use all available space when loading a vehicle. Towing a trailer places an additional load on your vehicle's engine, transmission, axle, brakes, tires and suspension. Inspect these components periodically during, and after, any towing operation.

Recommended Towing Weights

NOTE:

Do not tow a trailer during patrol or pursuit situations.

Sedan: Your vehicle is capable of towing a trailer up to 1,000 lb (454 kg) gross trailer weight with a maximum tongue load of 100 lb (45 kg).

Utility: Your vehicle is capable of towing a trailer up to 2500 lb (1134 kg) gross trailer weight with a maximum tongue load of 250 lb (113 kg).

Essential Towing Checks

Follow these guidelines to ensure safe towing:

- Do not tow a trailer with your vehicle until it has been driven at least 1,000 miles (1,600 kilometers).
- Consult your local motor vehicle laws for towing a trailer.
- Refer to the instructions included with towing accessories for the proper installation and adjustment specifications.
- Service your vehicle more frequently if you tow a trailer. Refer to your scheduled maintenance information.

For load specification terms found on the label and instructions on calculating your vehicle's load, refer to the Load Carrying chapter. Remember to figure in the tongue load of your loaded vehicle when Figuring the total weight.

Hitches

Section 3: Installation Considerations

Do not use a hitch that either clamps onto the bumper or attaches to the axle. Distribute the trailer load so 10 to 15% of the total trailer weight is on the tongue.

Safety chains

Always connect the safety chains to the vehicle's hook retainers. To connect the safety chains, cross them under the trailer tongue and allow slack for turning comers. If you use a rental trailer, follow the rental agency's instructions.

NOTE:
Never attach safety chains to the bumper

Trailer brakes

the Vehicle Curb Weight + cargo + passengers.

⚠ **WARNING:**
Do not connect. a trailer's hydraulic brake system directly to your vehicle's brake system. Your vehicle may not have enough braking power and your chances of having a collision greatly increase.

Electric brakes and manual, automatic or surge-type trailer brakes are safe if installed properly and adjusted to the manufacturer's specifications. The trailer brakes must meet local and Federal regulations. The braking system of the tow vehicle is rated for operation at the GVWR not GCWR.

Trailer lamps

Trailer lamps are required on most towed vehicles. Ensure all running lights, brake lights, turn signals and hazard lights are working. Contact your authorized dealer or trailer rental agency for proper instructions and equipment for hooking up the lamps.

Before towing a trailer

Practice turning, stopping and backing-up to get the feel of the vehicle-trailer combination before starting on a trip. When turning, make wider turns so the trailer wheels will clear curbs and other obstacles.

When towing a trailer

- Do not drive faster than 70 mph (113 km/h) during the first 500 miles (800 kilometers) and do not make full-throttle starts.
- Check your hitch, electrical connections and trailer wheel lug nuts thoroughly after you have traveled 50 miles (80 kilometers).
- Place the gearshift lever in P (Park) to aid in engine/transmission cooling and NC efficiency during hot weather while stopped in traffic.
- Turn off the speed control. The speed control may turn off automatically when you are towing on long, steep grades.
- Shift to a lower gear when driving down a long or steep hill. Do not apply the brakes continuously, as they may overheat and become less effective.
- If your transmission is equipped with the grade assist feature, use this feature when towing. This provides engine braking and helps eliminate excessive transmission shifting for optimum fuel economy and transmission cooling.
- Allow more distance for stopping with a trailer attached; anticipate stops and brake gradually.
- Avoid parking on a grade. However, if you must park on a grade, place wheel chocks under the trailer's wheels.

Always connect the safety chains to the vehicle's hook retainers. To connect the safety chains, cross them under the trailer tongue and allow slack for turning corners. If you use a rental trailer, follow the rental agency's instructions.

Wrecker Towing

If you need to have your vehicle towed, contact a professional towing service or, if you are a member of a roadside assistance program, your roadside assistance service provider. It is recommended that your vehicle be towed with a wheel lift and dollies or flatbed equipment. Do not tow with a slingbelt. Ford Motor Company has not approved a slingbelt towing procedure. Ford Motor Company produces a turning manual for all authorized tow truck operators. Have your tow truck operator refer to this manual for proper hook-up and towing procedures for your vehicle. Front-wheel drive (FWD) vehicles can be towed from the front if proper wheel lift equipment is used to raise the front wheels off the ground. The rear wheels can be left on the ground when towed in this fashion. FWD vehicles can also be towed from the rear using wheel lift equipment; however, the front wheels need to be placed on a dolly to prevent damage to the transmission. All-wheel drive (AWD)/Four-wheel drive (4WD) vehicles must be towed with a wheel lift and dollies or flatbed equipment, with all the wheels off the ground, to prevent damage to the transmission, AWD/4WD system or vehicle. If the vehicle is towed by other means or incorrectly, vehicle damage may occur.

Towing The Vehicle On Four Wheels

Emergency towing

Section 3: Installation Considerations

In the event your vehicle becomes disabled (without access to wheel dollies, car-hauling trailer, or flatbed transport vehicle), it can be flat-towed (all wheels on the ground, regardless of the powertrain transmission configuration) under the following conditions:

- The vehicle is facing forward so that it is towed in a forward direction.
- The transmission is placed in N (Neutral). Refer to Automatic transmission in the Transmission chapter if you cannot move the transmission into N (Neutral).
- Maximum speed is 35 mph (56 kmp/h).
- Maximum distance is 50 miles (80 kilometers).

Recreational towing

NOTE:
Put your climate control system in recirculated air mode to prevent exhaust fumes from entering the vehicle. Refer to the Climate Control chapter.

Follow these guidelines for your specific powertrain combination to tow your vehicle for personal travel (such as behind a motor home or a truck). These guidelines are designed to prevent damage to your vehicle after it is hooked-up to the RV or tow dolly. Front-wheel drive (FWD) vehicles can be towed with all four wheels on the ground or with the front wheels off the ground by using a tow dolly. If you are using a tow dolly follow the instructions specified by the equipment provider. If you are towing with all four wheels on the ground, refer to the towing instructions found at the end of this section. All-wheel drive (AWD)/Four-wheel drive (4WD) vehicles can be towed with all four wheels on the ground or with all four wheels off the ground using a vehicle transport trailer. Do not tow your AWD/4WD vehicle with the front wheels off the ground (by using a tow dolly) and the rear wheels on the ground; this will cause damage to your AWD/4WD system. If you are using a vehicle transport trailer, follow the instruction specified by the equipment provider. If you are towing with all four wheels on the ground, refer to the towing instructions found at the end of this section.

If you tow your vehicle with all four wheels on the ground:

- Have your transmission fluid level checked by an authorized dealer. For the correct transmission fluid level when flat towing (all four wheels on the ground), refer to Automatic transmission fluid check in the Maintenance chapter.
- Tow only in the forward direction.
- Release the parking brake.
- Place the transmission in N (Neutral).
- Place the ignition in the accessory position. Refer to ignition switch in the Starting and Stopping the Engine chapter.
- Do not exceed 65 mph (105 km/h).
- Start the engine and allow it to run for five minutes at the beginning of each day and every six hours thereafter. With the engine running and your foot on the brake, shift into D (Drive) and then into R (Reverse) before shifting back into N (Neutral).

Before towing a trailer

Practice turning, stopping and backing-up to get the feel of the vehicle-trailer combination before starting on a trip. When turning, make wider turns so the trailer wheels will clear curbs and other obstacles.

Table of Contents

Contents **PAGE**

Section 4: Trunk Mounting Considerations 4-2
  Trunk Equipment Mounting Guide 4-2
  Sedan Trunk Lockable Storage 4-5
  Trunk Pack^{TM} and Trunk Loading 4-8
  Headlamp Adjustment 4-11
  Photometric Aiming 4-12
  Screen Method Aiming 4-12
  Trunk Weight 4-14
  Sedan Trunk Full-Size Spare Tire Retainer 4-16
  Sedan Full-Size Tire in Foam/Wheel Well 4-17
  Sedan Trunk Electronics Tray 4-17

Section 4: Trunk Mounting Considerations

Section 4: Trunk Mounting Considerations

Trunk Equipment Mounting Guide

The following trunk equipment mounting templates illustrate where fasteners are not allowed, where blunt head fasteners must be used and where standard fasteners are allowed. Be aware of the following component locations when mounting equipment in the trunk:

- Fuel tank
- Fuel lines
- Brake lines
- Evaporative emissions canister
- Electronic modules
- Wiring harnesses

NOTE:
Refer to Section 5: Reference Information in this guide for additional illustrations showing location of the fuel tank, fuel lines, brake lines, evaporative emissions canister, electronic modules, and wiring harnesses.

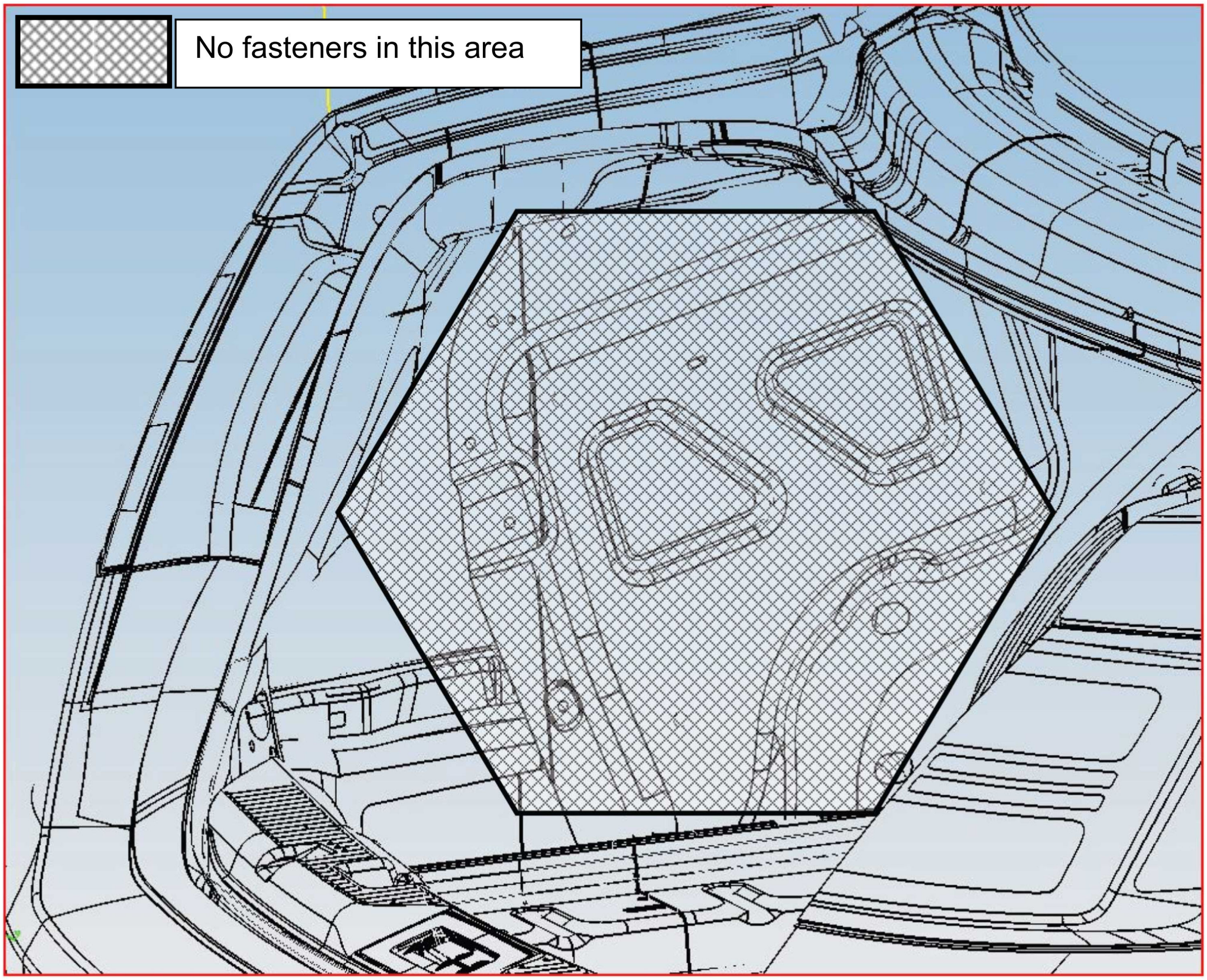
NOTE:
Trunk equipment mounting templates are for reference only. Inspection behind trunk side trim and under carriage advised for accurate component locations.

NOTE:
Maintain minimum part-to-part clearances of 6 mm unless otherwise noted when mounting any non-factory installed equipment.

NOTE:
Utilize self-locking fasteners when mounting equipment.

Trunk Sides Sedan Left Side Shown Applies To Right Side Also.

Section 4: Trunk Mounting Considerations



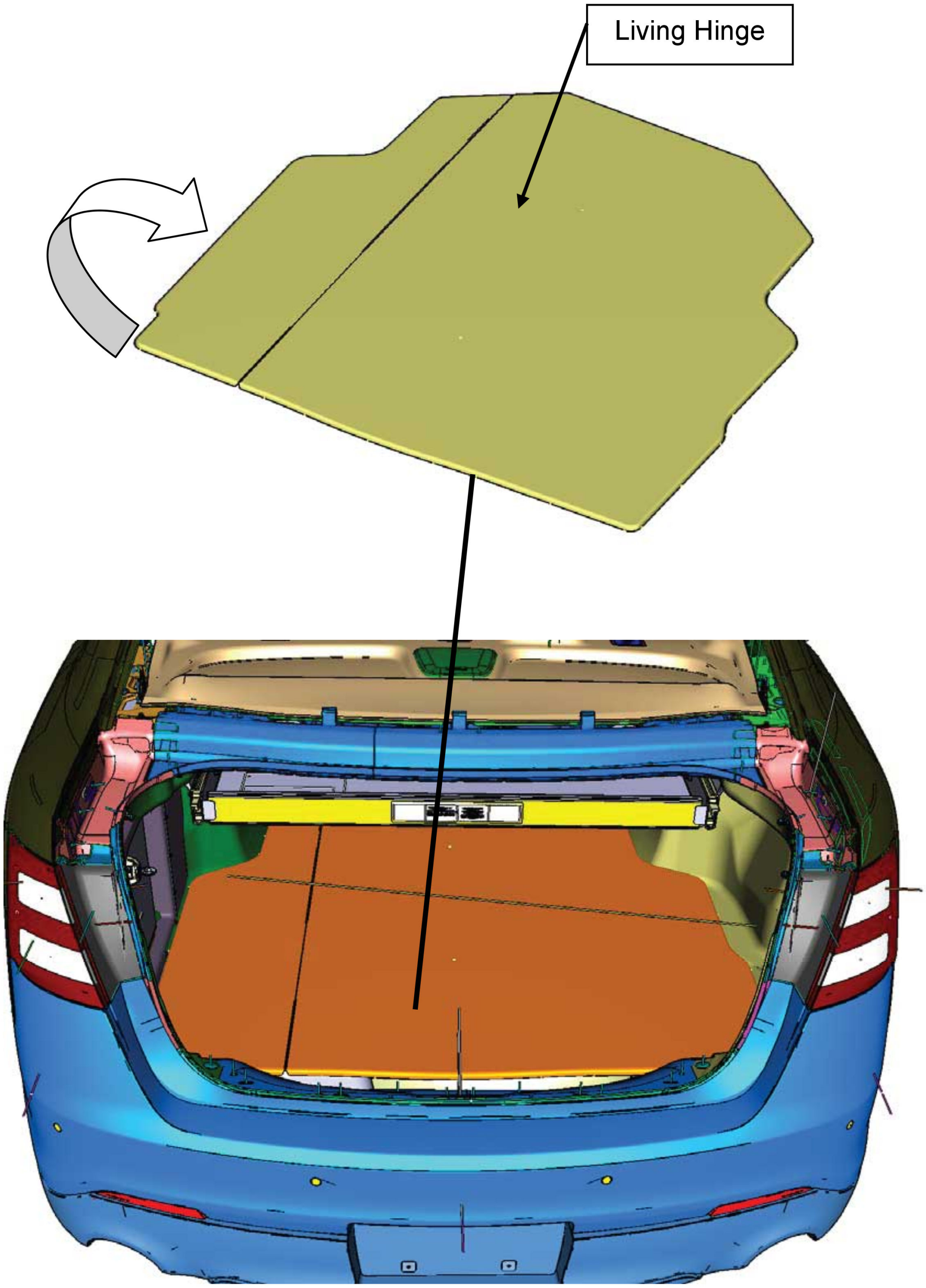
N0140497

Trunk Load Floor

The trunk load floor is capable of supporting up to 181 Kg (400 lbs). Weight should be evenly distributed over the surface of the load floor.

Combined weight of occupants and cargo should not exceed the payload capacity as stated on the tire label and must not exceed the Gross Axle Weight Rating (GAWR).

Section 4: Trunk Mounting Considerations



N0140501

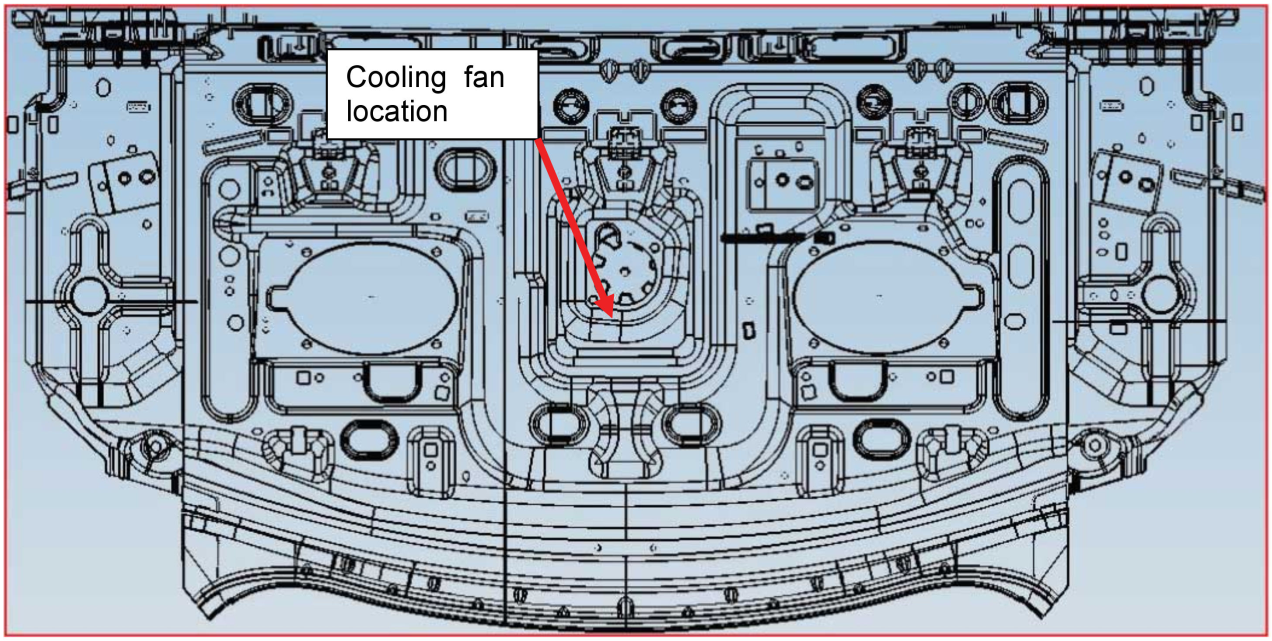
The trunk load floor is capable of supporting up to 400 lbs. Weight should be evenly distributed over the surface of the load floor.

Combined weight of occupants and cargo should not exceed the payload capacity as stated on the tire label and must not exceed the Gross Axle Weight Rating.

Package Tray

Section 4: Trunk Mounting Considerations

Do not mount equipment to package tray in rear window of sedan

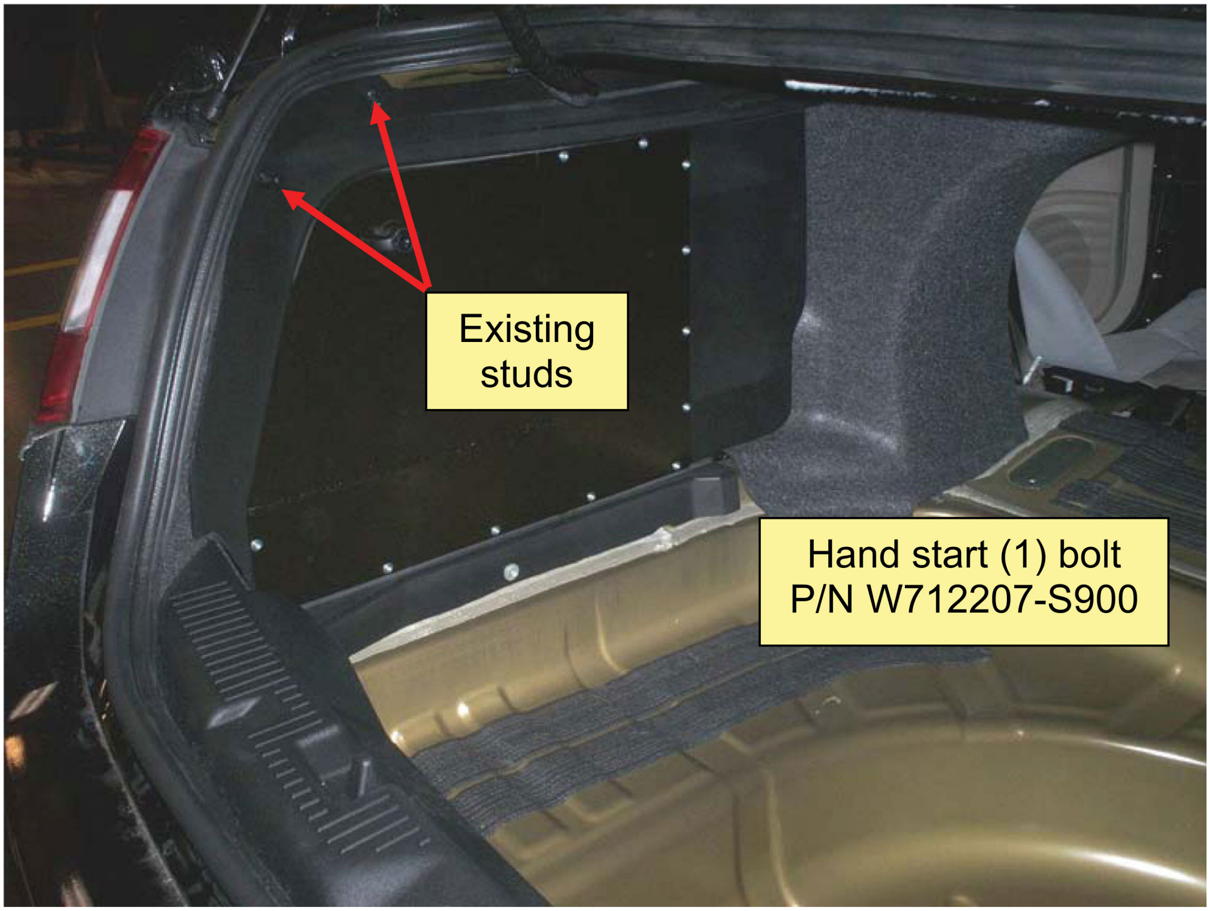


N0140557

Sedan Trunk Lockable Storage

1. Obtain 1 storage box P/N DG135431149ABW and install into the driver side of the trunk as shown, make sure the 2 upper rear holes in the plastic storage box are aligned to the 2 existing studs in the trunk.
2. Obtain 1 bolt P/N W712207-S900, hand start 1 bolt in the lower outside of the storage box as shown.

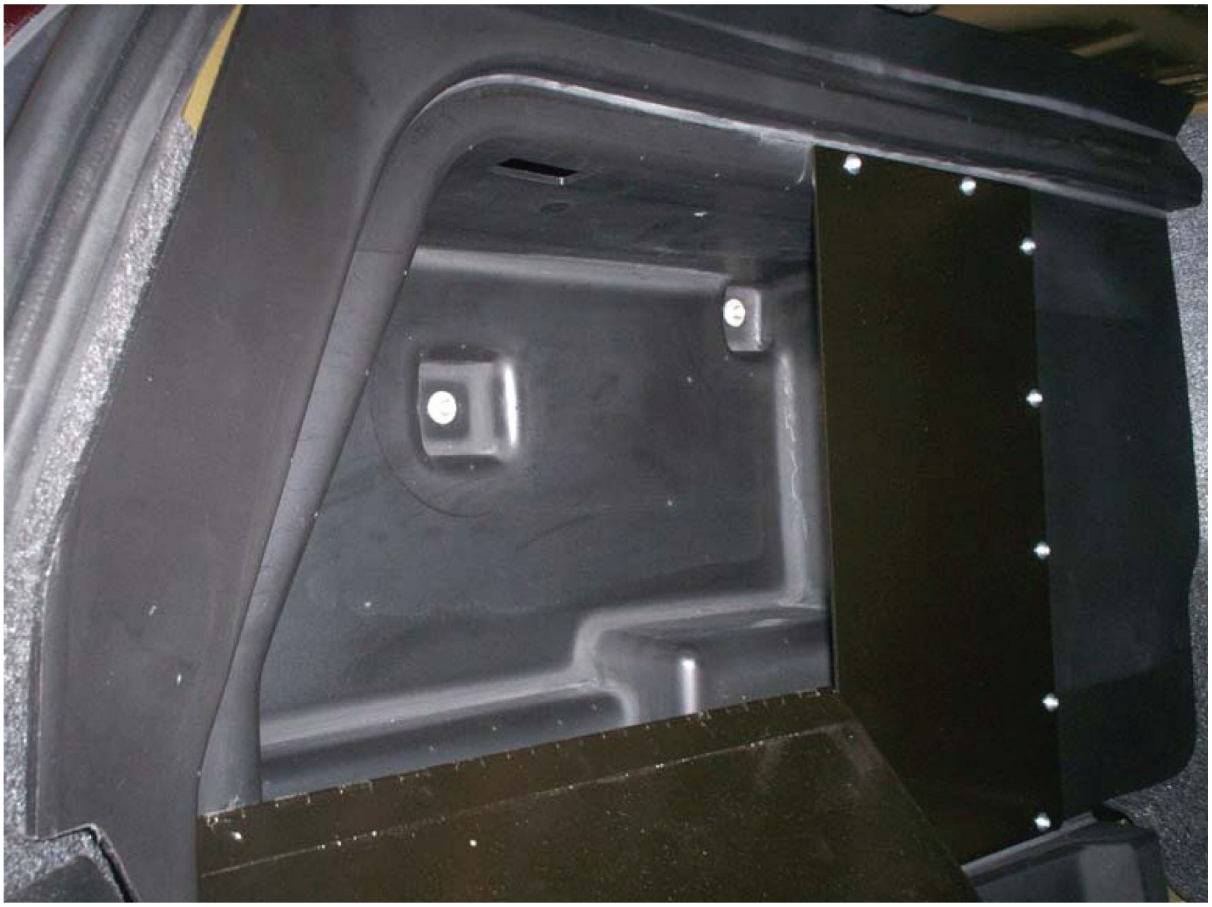
Section 4: Trunk Mounting Considerations


Existing studs
Hand start (1) bolt P/N W712207-S900

N0141049

3. Open metal door on storage box, install 2 bolts P/N W710330-S439 through the storage box to the existing weld nuts in the body as shown, tighten the 3 previously installed bolts to 9 Nm ± 1.4 Nm.

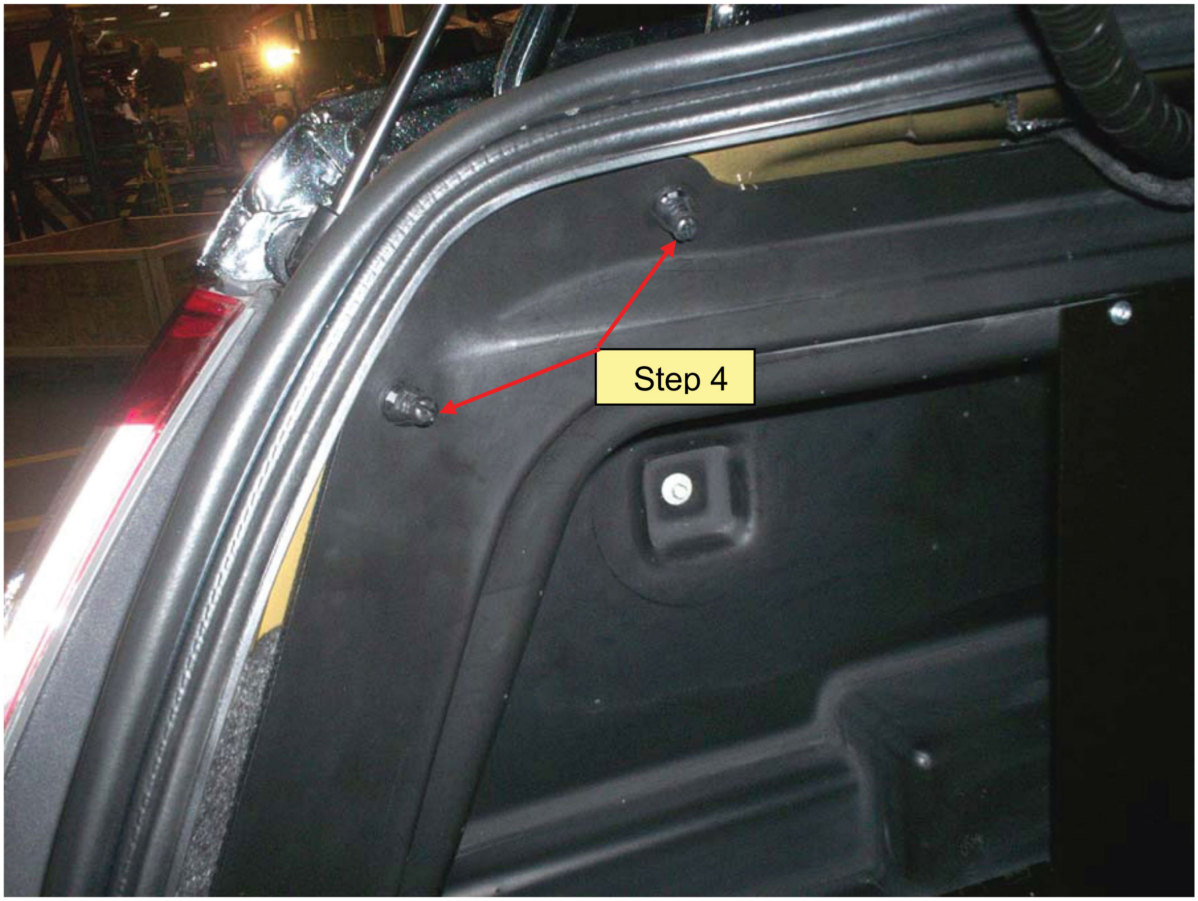
Section 4: Trunk Mounting Considerations



N0141052

4. Obtain 2 push on caps P/N W714241-S300 and install to the existing studs protruding through the storage box, push the caps on over the studs until secure.

Section 4: Trunk Mounting Considerations



N0141050

Trunk Pack™ and Trunk Loading

⚠ **WARNING:**

Ford recommends that police equipment be both secured and laterally aligned. Hard, stiff or sharp objects, especially when not secured or properly located, pose a risk to the fuel tank and back seat occupants. Aftermarket organizers that do not adequately deform in rear-impacts can themselves become injury-producing objects. When locating, securing and mounting police equipment, please review the Trunk Equipment Mounting Guide, available on the www.fleet.ford.com web site, which provides recommended fastener mounting types and locations.

Following the trunk packing recommendations (also on the www.fleet.ford.com web site) is the most meaningful method of reducing risk. If your department practice is inconsistent with the trunk packing recommendations, then Ford suggests that you consider purchasing an optional drop-in Trunk Pack™ to further reduce the risk of injury resulting from police equipment pushing forward into the back seat and/or fuel tank in the event of a high-speed rear impact.

To improve trunk packing by police agencies, Ford has made the following items available:

- Trunk Equipment Mounting Guide — an outline pattern with recommended fastener mounting locations in the trunk. The guide can be found on previous pages in this section and on the Internet at www.fleet.ford.com.
- Trunk Packing Considerations — the following guidelines are offered to reduce the risk of unique police equipment items pushing through the fuel tank and/or back seat. See www.fleet.ford.com for more details.

A slogan has been developed to increase police agency awareness of the importance of trunk packing.

Improve police officer safety by implementing a trunk-packing process called "LOAD SAFE".

Section 4: Trunk Mounting Considerations

LOAD	SAFE
Lateral	**S**oft
Orientation	**A**nd
And	**F**ixed
Direction	**E**quipment

Equipment Categories and Placement

⚠ **WARNING:**

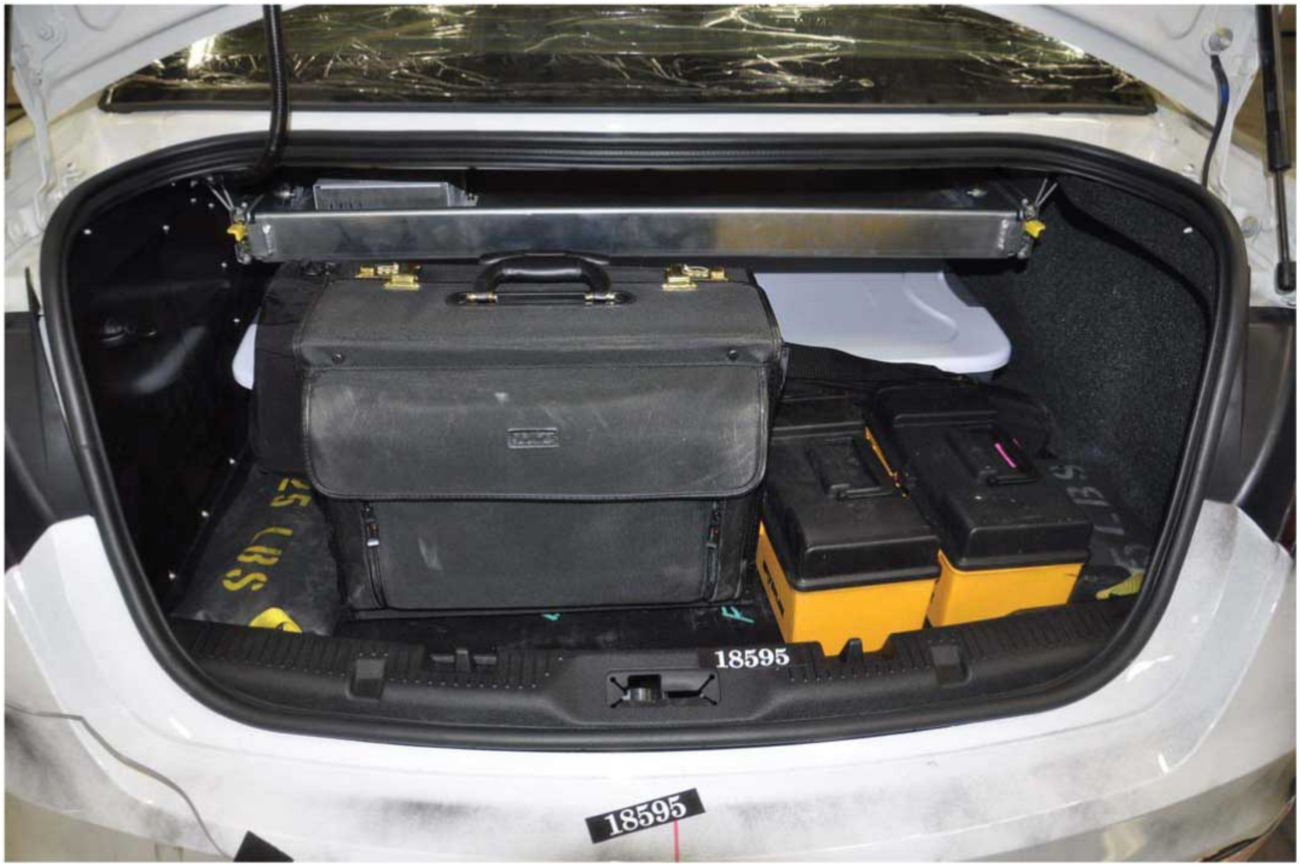
Gasoline should not be stored in the trunk at any time, regardless of container. Failure to follow this instruction may result in personal injury.

It is recognized that a wide variety of equipment is carried in the trunks of police vehicles as noted above. This section addresses the inherent risks of various types of equipment in the event of a high-speed rear impact.

This information is divided into 3 categories:

- **Carrying Not Recommended —**The following items have been observed in police vehicles and **should not be transported in the vehicle trunk**: containers with gasoline, loose ammunition, loose flares, loose fire extinguisher(s), loose 4-point lug wrenches, loose crowbars, loose axes and other loose equipment with potential puncture capability in high-speed rear-end collisions.
- **Carry With Caution —**These items will require special packing or mounting consideration and possible use of the Trunk Pack™ as an additional level of safety. Examples include (with proposed orientation): fire extinguisher (fixed), lug wrench 4-point (fixed, vertical), rolotape measuring wheel (fixed, vertical), safety flares (lateral orientation, in a container), Stop Stick (lateral, mount on deck lid inner panel), shovel (lateral, place at rear of trunk), shotgun and rifle (lateral, store in case), baton (lateral, place at rear of trunk), electronic equipment (use Trunk Equipment Mounting Guide to determine equipment mounting locations) and ammunition (container). Flares should be placed in a protective storage container (preferably soft-sided plastic). Flares with spikes attached should be laterally oriented in the trunk area.
- **Spare Tire Special Considerations:** The safest location for the spare tire, jack and lug wrench is the production location on the forward package shelf above the rear axle. If unable to mount there, the next safest location for the spare tire is mounted vertically inside the Trunk Pack™ using the J-bolt attachment device provided with the Trunk Pack™. However, if the manufacturer's location for the spare tire is changed and the area above the axle is used to mount a sliding tray, use the Trunk Equipment Mounting Guide and suitable fasteners of appropriate length to reduce the risk of fuel tank puncture. The jack and lug wrench should be stored in the rearward compartment of the Trunk Pack™.
- **Electronic Equipment:** The safest location for the electronic equipment is on the trunk forward package shelf. Some equipment can be mounted in the side shelf areas, but it must not intrude into the fuel tank area in a crash (noted in Trunk Equipment Mounting Guide). The optional Complete Police Prep Package, described in Section 1, is available to facilitate packaging of electronic components with a sliding tray forward package shelf and side in the right and left shelf area. All equipment should be located and mounted using the "Trunk Equipment Mounting Guide" for proper positioning of fasteners. This guide can be accessed on www.fleet.ford.com. The sliding tray can also be used, depending on size, to properly store parts with rigid and sharp edges.
- **Ammunition:** The safest place for ammunition is the forward package shelf and on the side shelves. It is recommended that a plastic storage container (see Police Prep Package (68P) - Trunk storage boxes, LH or RH box can be purchased separately from any authorized Ford dealer) be used and mounted using the "Trunk Mounting Equipment Guide" for proper fastener locations. It is also recommended that ammunition remain in the purchased container and be placed in a safe storage container.
- **Low Risk Items —** These items are soft in feel and pose a low risk of trunk wall, rear seat area or fuel tank puncture. Examples are: a soft camera case, biohazard kit in plastic boxes, gloves, safety rope, tow strap, traffic cones and sleeves, rain gear, riot gear (soft), emergency blankets, bullet-resistant vests, tie straps, cloth tape, garment bags, first responder kit, Res-Q-Flo masks (placed in garment bag), fuses (plastic container), briefcases, notebooks, spray bottles, helmets and jumper cables. It is not essential but recommended that the Trunk Pack™ be considered for organization of low risk items, especially if mixed with Carry With Caution items.

Section 4: Trunk Mounting Considerations


25 LBS
25 LBS
18595
18595

N0140558

Section 4: Trunk Mounting Considerations

N0140559

Headlamp Adjustment

NOTE:
Refer to the Owner Literature for the headlamp adjustment screw location.

NOTE:
Consult your state vehicle inspection manual for recommended tolerance ranges for visual aiming.

NOTE:
Horizontal aim is not adjustable.

1. Identify the headlamp type. Vehicles are equipped with visually optically aligned left (VOL) or visually optically aligned right (VOR) headlamps. Molded in small letters on the headlamp lens is one of the following:

- VOL and SAE.

Section 4: Trunk Mounting Considerations

- VOR and SAE.

2. Aim the headlamps using one of the following methods:

- Photometric aimers (preferred method).
- Visual or screen method aiming (acceptable method).

Photometric Aiming

For the photometric aiming procedure, refer to the appropriate photometric headlamp aimer instruction manual.

Screen Method Aiming

All headlamp types

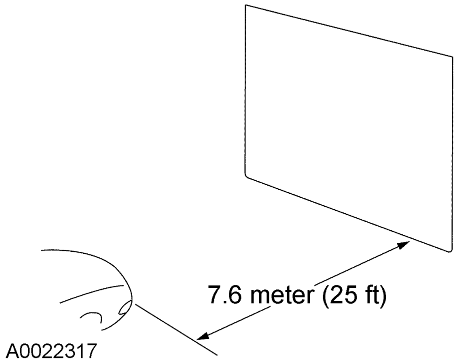
1. Before starting headlamp adjustment:

- vehicle must be on level ground.
- tires must be correctly inflated.
- vehicle must be normally loaded.
- headlamps must be clean.
- air suspension switch must be on (if equipped).

2. **NOTE:**
   The vertical wall or screen must be a minimum of 2.4 m (8 ft) wide.

   NOTE:
   This procedure should be done in a dark environment to effectively see the headlamp beam pattern.

   Park the vehicle on a level surface with the low beam headlamp lens surface approximately 7.6 m (25 ft) from the vertical wall or screen directly in front of it.



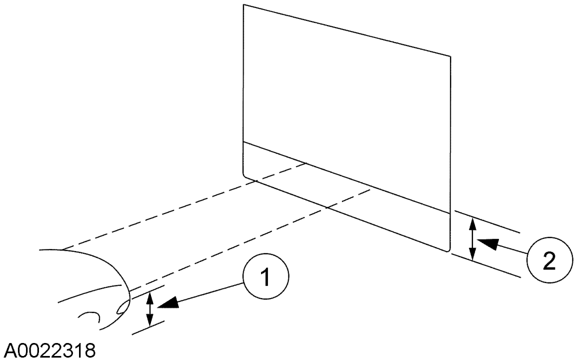
3. **NOTE:**
   The bulb center of the low beam bulb is sometimes marked on the lens (circle, crosshair or other mark) or is the center of the low beam reflector, bulb shield or the low beam projector inner lens.

   Mark a horizontal reference line on the vertical wall or screen.

- Measure the distance between the center of the low beam headlamp bulb and ground. Record the measurement.
- Make a 2.4 m (8 ft) horizontal mark (using masking tape) on the vertical wall or screen at the height as follows:

Section 4: Trunk Mounting Considerations

Headlamp bulb center height	Horizontal reference line height
below 95 cm (37.5 inches)	same as bulb center height
95 cm - 105 cm (37.5 inches - 41.5 inches)	bulb center height minus 1.3 cm (.5 inch)
above 105 cm (41.5 inches)	bulb center height minus 2.5 cm (1.0 inch)



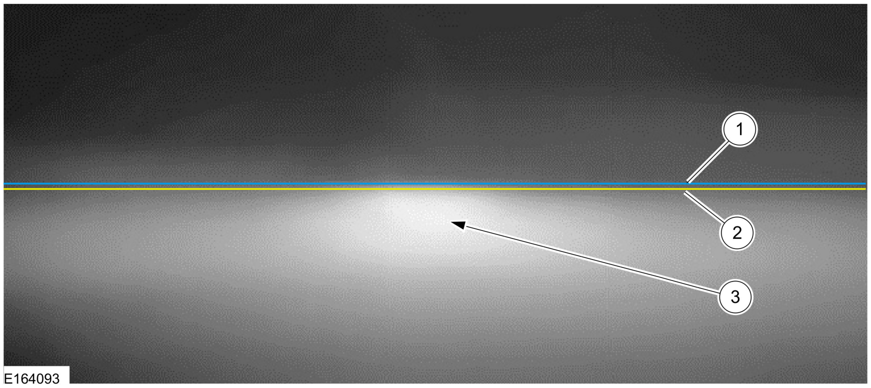
4. Turn on the low beam headlamps to illuminate the wall or screen and open the hood.
5. **NOTE:**
   The cut off of the beam pattern is the horizontal line of the beam pattern where there is MAXIMUM change between light & dark On the wall or screen, locate the cut off of the beam pattern.

VOR Type Headlamps

NOTE:
Procedure applies to both left and right headlamps with VOR molded on lens.

6. **NOTE:**
   The appearance of the VOR beam pattern may vary between vehicles.

   There is a distinct cutoff in the right portion of the beam pattern.
   1. Horizontal reference line.
   2. Cut off.
   3. High intensity zone.



7. **NOTE:**
   Align one headlamp while covering the other headlamp.

Section 4: Trunk Mounting Considerations

Align the headlamps to the horizontal reference line.

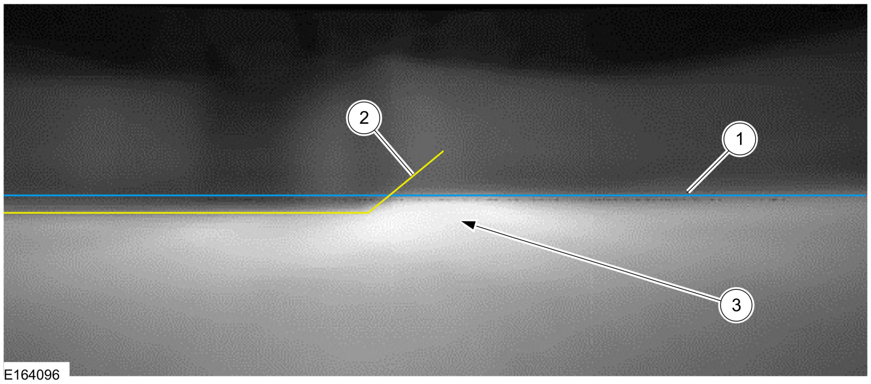
Adjust the headlamp as necessary using the headlamp adjusting screw. Repeat this step for the remaining headlamp.

VOL type headlamps

NOTE:
Procedure applies to both left and right headlamps with "VOL" molded on lens.

8. **NOTE:**
   The appearance of the VOL beam pattern may vary between vehicles.

   1. Horizontal reference line.
   2. Cut off.
   3. High intensity zone.



9. **NOTE:**
   Align one headlamp while covering the other headlamp.

   Align the headlamps to the horizontal reference line.

   Adjust the headlamp as necessary using the headlamp adjusting screw. Repeat this step for the remaining headlamp.

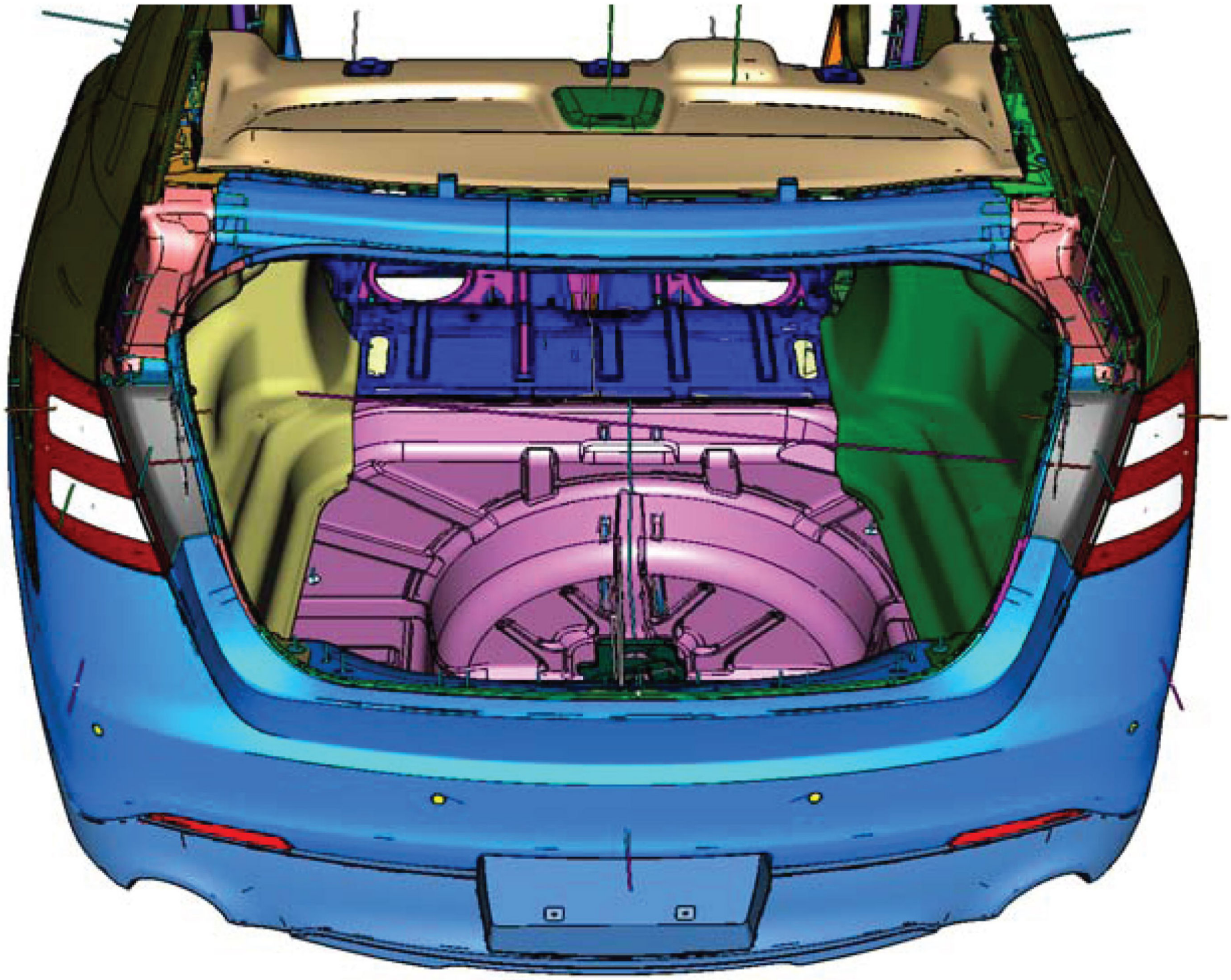
Trunk Weight

The vehicle's high-speed handling and curb height will become increasingly affected as weight is added to the trunk or cargo area. The more weight that is placed in the trunk or cargo area, the more it will change the ride and handling characteristics of the vehicle. Consider these factors when installing equipment and placing items in the trunk or cargo area of the vehicle.

Vehicle weight can be impacted considerably based on final upfit content and as a result of changes in the weight distribution headlamp aim may require adjustment. Upon final upfit, it is recommended that headlamp aim is inspected and adjusted as necessary following the Ford headlamp aim procedure.

The Vehicle Certification (VC) label on the driver door lists a maximum load for the vehicle (occupants + luggage + police equipment).

Section 4: Trunk Mounting Considerations



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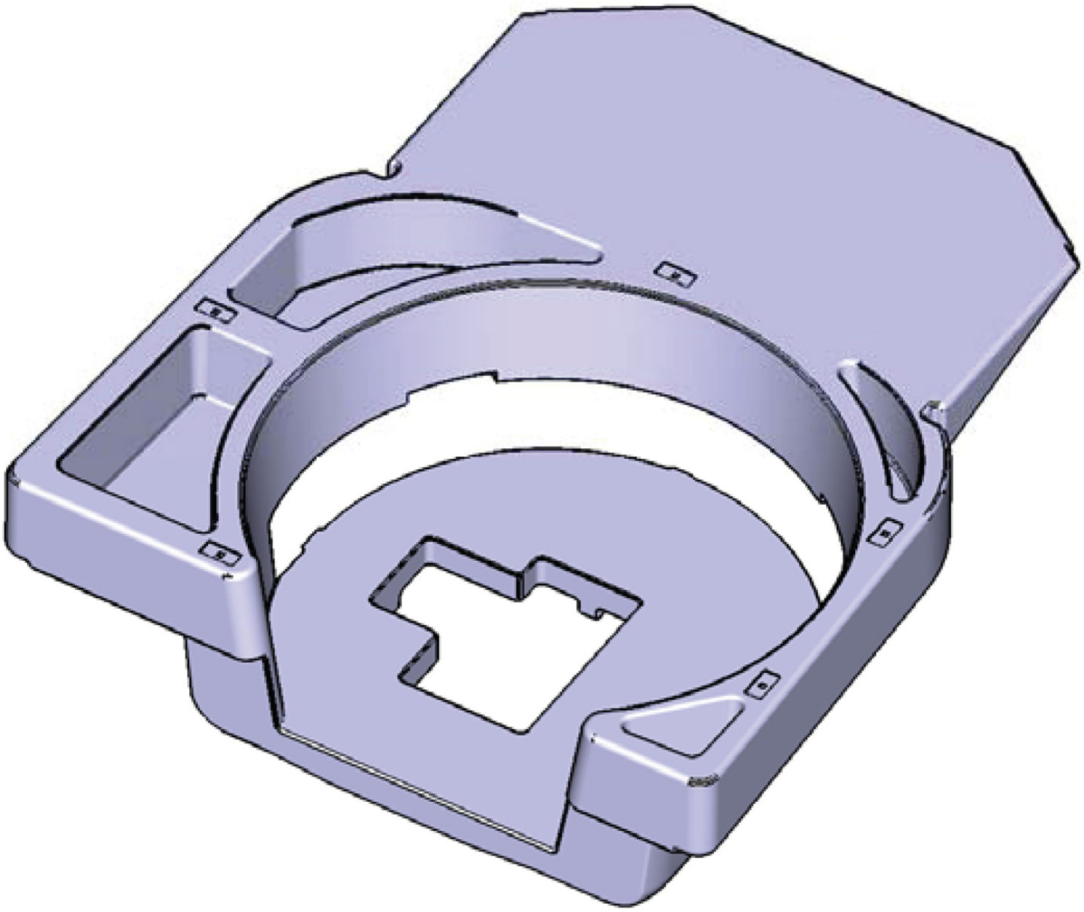
Section 4: Trunk Mounting Considerations

Sedan Trunk Full-Size Spare Tire Retainer



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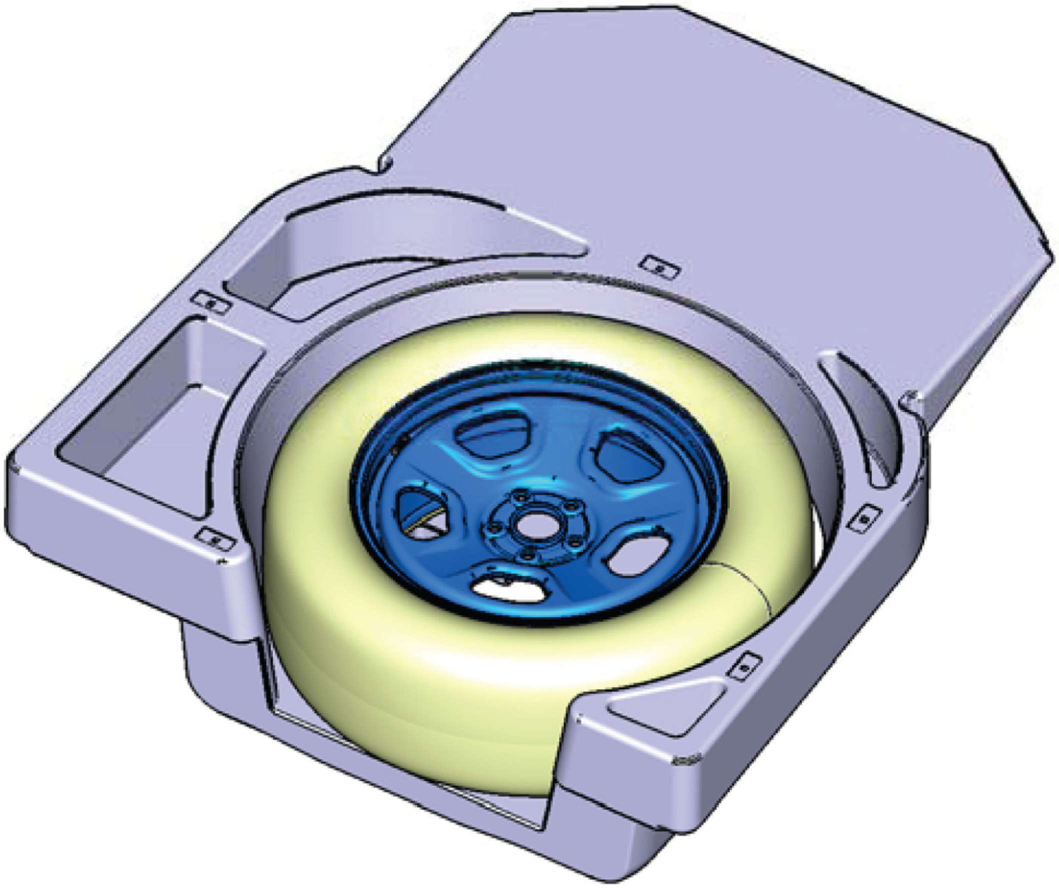
Section 4: Trunk Mounting Considerations

Sedan Full-Size Tire in Foam/Wheel Well

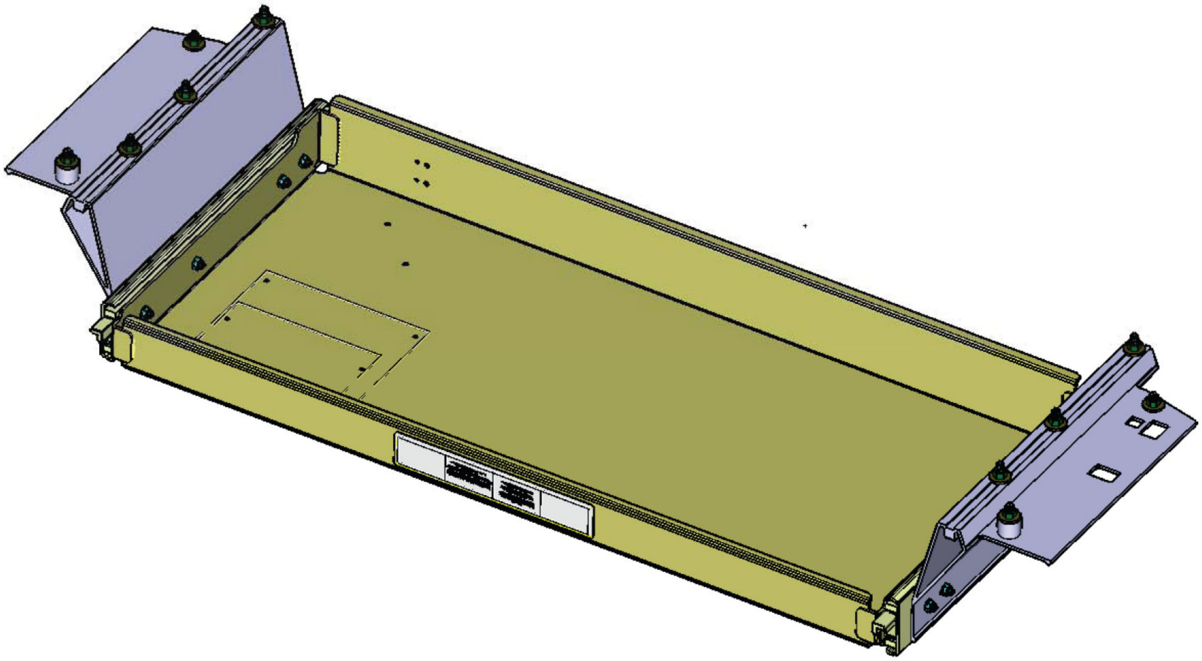


N0140562

Sedan Trunk Electronics Tray

Weight should be distributed evenly over the horizontal mounting surface of the electronics trunk tray.

Section 4: Trunk Mounting Considerations



N0140563

Table of Contents

Contents **PAGE**

Section 5: Reference Information 5-2
  Airbag Deployment Interference 5-2

Section 5: Reference Information

Section 5: Reference Information

Airbag Deployment Interference

Engineering Drawings

⚠ **WARNING:**
Do not place objects or mount equipment in front of the airbag module cover or in front seat areas that may come in contact with a deploying airbag. Dash, tunnel or console-mounted equipment should be placed within the specified zone. Failure to follow these instructions may result in personal injury.

⚠ **WARNING:**
Dash, tunnel or console-mounted equipment should not be placed outside the specified zone. Failure to follow these instructions may result in personal injury.

⚠ **WARNING:**
Do not mount equipment by the side of the front seat to the door trim that would block deployment of the side airbag. Failure to follow these instructions may result in personal injury.

⚠ **WARNING:**
Do not mount equipment by inside the roof line along the upper edge of the side windows from front to rear of the vehicle that would block deployment of the Safety Canopy® Airbag. Failure to follow these instructions may result in personal injury.

Driver/passenger airbags affect the way police equipment can be mounted in police vehicles. Any surfaces that could come into contact with an airbag during deployment must not damage the airbag or alter its deployment path. Sharp edges, corners or protrusions could damage the nylon airbag material and reduce the effectiveness of the airbag. Do not mount or place objects in the deployment path of an airbag. Airbags must be allowed to fully deploy without restriction. The deployment of airbags is not compatible with any configuration of police equipment mounting that places objects in the airbag deployment path. Equipment mounted or placed in the deployment area of an airbag will reduce the effectiveness of the airbag, damage the airbag and potentially damage or dislodge the equipment.

Some approximate dimensions for airbags, at full inflation, are provided in Figures 1 through 5. These dimensions are somewhat flexible and represent free-form deployments without the loading of occupants. The illustrations in this section represent available police equipment mounting zones. These zones are shown for police vehicles equipped with standard bucket seats.

All airbag and equipment mounting zone dimensions are approximate due to different airbag deployment characteristics.

Mount no equipment between the side of the front seat and the door trim that would block deployment of the side airbag.

Mount no equipment inside the upper edge of the roof line or along side windows trim panels from front to rear of vehicle that would block deployment of the Safety Canopy® airbag.

⚠ **WARNING:**
Do not attempt to service, repair, or modify the airbag, its fuses or the seat cover on a seat containing an airbag. Contact your authorized dealer as soon as possible.

⚠ **WARNING:**
If the side airbag has deployed, the airbag will not function again. The side airbag system (including the seat) must be inspected and serviced by an authorized dealer. If the airbag is not replaced, the unrepaired area will increase the risk of injury in a collision.

The side airbags will deploy on the side affected by the collision during significant lateral collisions. The airbags will inflate within a few thousandths of a second and deflate on contact with occupants, thus providing protection for the chest and shoulder areas. During minor lateral collisions, roll-overs, front collisions and rear collisions, the side airbags will not deploy.

NOTE:
The passenger sensing system will deactivate the passenger seat-mounted side airbag if it detects an empty, unbuckled passenger seat.

The system consists of the following

Section 5: Reference Information

- A label or embossed side panel indicating that side airbags are fitted to your vehicle.
- Side airbags located inside the seatback of the driver and front passenger seatbacks.
- Canopy curtain airbag.
- Knee airbag module (Utility Only)
- The same warning light, electronic control and diagnostic unit as used for the front airbags.
- Crash sensors located within the vehicle.

⚠ **WARNING:**
Do not place objects or mount equipment in an area that may come into contact with a deploying curtain airbag. Failure to follow these instructions may increase the risk of personal injury in the event of a collision.

⚠ **WARNING:**
Do not lean your head on the door. The curtain airbag could injure you as it deploys from the headliner.

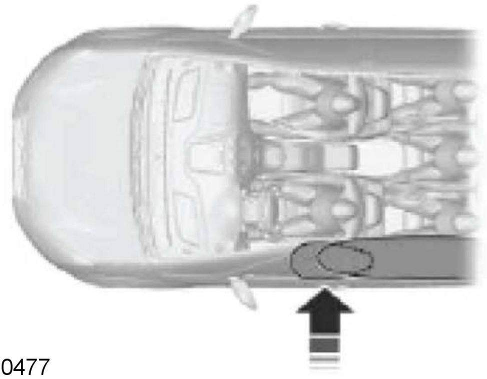
⚠ **WARNING:**
Do not attempt to service, repair, or modify the curtain airbags, its fuses, the A, B, or C pillar trim, or the headliner on a vehicle containing curtain airbags, Contact your authorized dealer as soon as possible.

⚠ **WARNING:**
All occupants of the vehicle including the driver should always wear their safety belts even when an airbag SRS and Curtain airbag is provided.

⚠ **WARNING:**
To reduce risk of injury, do not obstruct or place objects of the deployment path of the canopy curtain airbag.

⚠ **WARNING:**
If the canopy air curtain has deployed, the air curtain will not function again. The side curtain system (including the A, B and C pillar trim and headliner) must be inspected and serviced by an authorized dealer. If the curtain airbag is not replaced, the unrepaired area will increase the risk of injury in a collision. The curtain airbags will deploy during significant lateral collisions or when the likelihood of a rollover event is detected by the rollover sensor. The airbag will inflate within a few thousandths of a second and deflate within a brief period, thus providing protection for the head. During minor lateral collisions, front collisions or rear collisions the curtain airbags will not deploy.

The system consists of the following:



N0140477

- Curtain airbags fitted above the trim panels over the front and rear side windows.
- A flexible headliner which opens above the side doors to allow air curtain deployment.
- The same warning light, electronic control and diagnostic unit as used for the front airbags.

- Crash, rollover and pressure sensors located within the vehicle.

Police Equipment Mounting and Airbag Locations

Dual driver/passenger airbags, side airbags and knee airbags affect the way police equipment can be mounted in police vehicles. Any surfaces that could come into contact with an airbag, once it has deployed, must not damage the airbag or alter its deployment path.

Once the airbag has fully deployed, any peripheral equipment surfaces that could come into contact with the airbag (such as when the airbag deflates with the loading of an occupant) must not damage the airbag or alter its deployment path. Sharp edges, corners or protrusions could damage the nylon airbag material and reduce the effectiveness of the airbag.

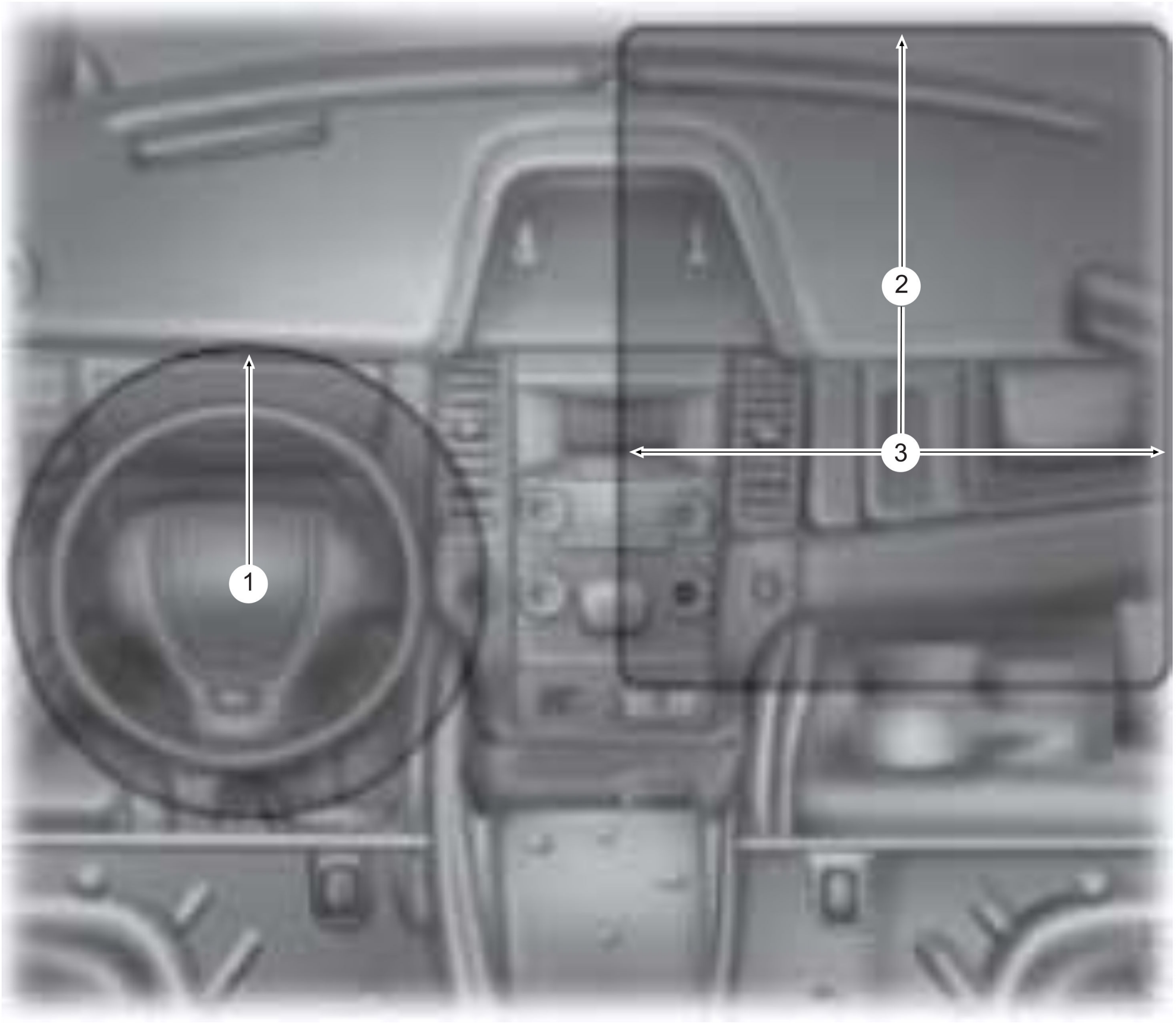
⚠ **WARNING:**
Do not place objects or mount equipment in front of the airbag module cover or in front of the seat areas that may come in contact with a deploying airbag. Failure to follow this instruction could result in personal injury. For equipment placed within the air bag deployment zone the path of the deploying air bag must be considered so as not to affect the air bag deployment. Also, occupant positions in a collision or event causing air bag deployment must be considered. Failure to follow this instruction could result in personal injury.

⚠ **WARNING:**
Dash, tunnel or console mounted equipment should be placed outside of the specified zone. Failure to follow this instruction could result in personal injury.

⚠ **WARNING:**
Do not mount equipment by the side of front seat to the door trim to block deployment of the side airbag. Failure to follow this instruction could result in personal injury. Some approximate dimensions for airbags, at full inflation, are provided in the illustrations in this section. These dimension are somewhat flexible and represent free form deployments without the loading of occupants. The shaded areas represent airbag deployment zones and should be avoided. Consideration of airbag deployment paths and occupant positions must be considered when mounting equipment near these areas. These zones are shown for police vehicles equipped with standard bucket seats. The zone dimensions provided are approximate and will vary with the loading of the occupants in the seats. All airbag and equipment mounting zone dimensions are approximate due to different airbag deployment characteristics. No equipment will mount between the side of the front seat and the door trim to block deployment of the side airbag.

Sedan Police Interceptor — Front Airbag Deployment Zones

Section 5: Reference Information



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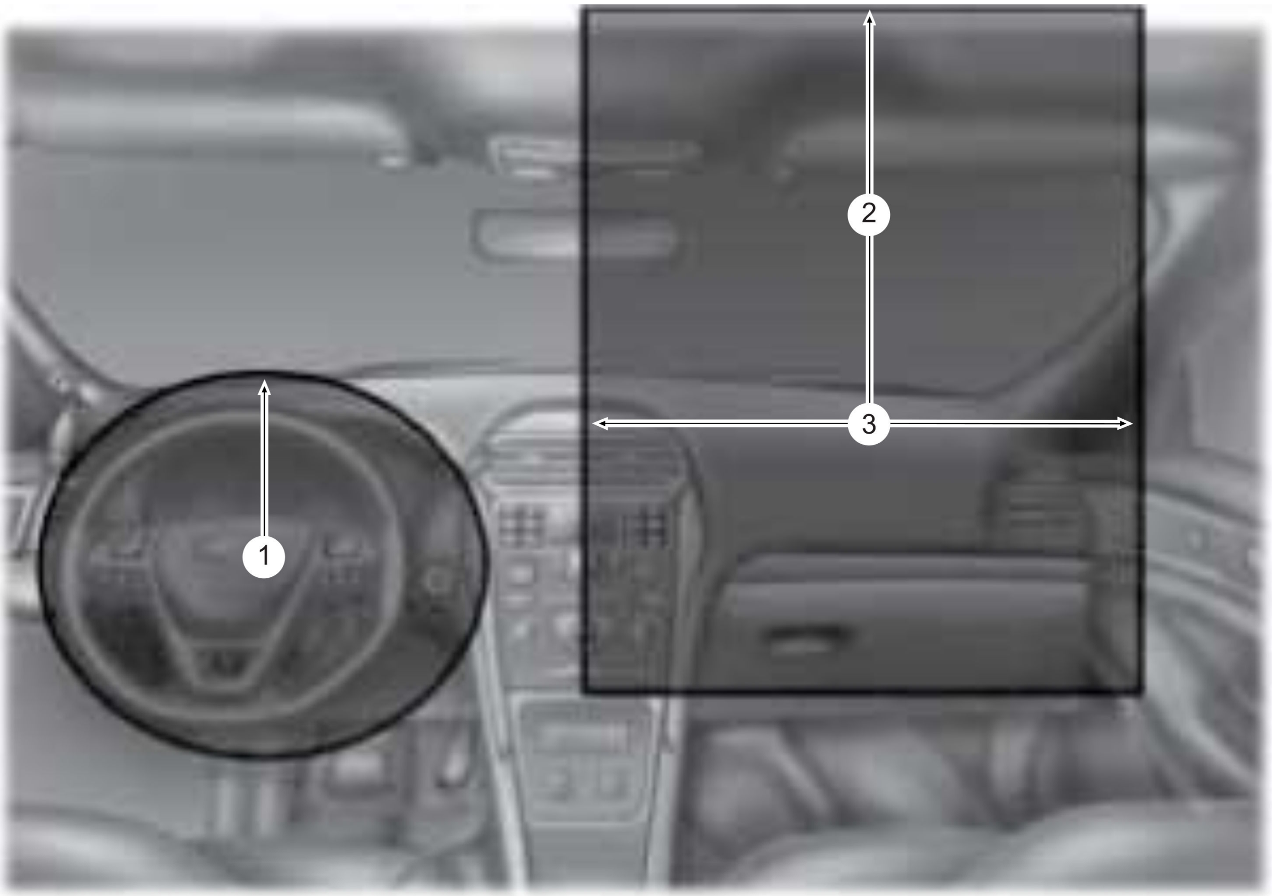
Utility Police Interceptor — Front Airbag Deployment Zones

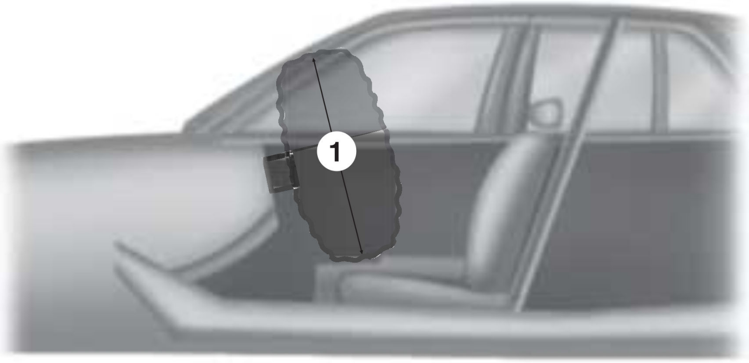
Section 5: Reference Information



N0146349

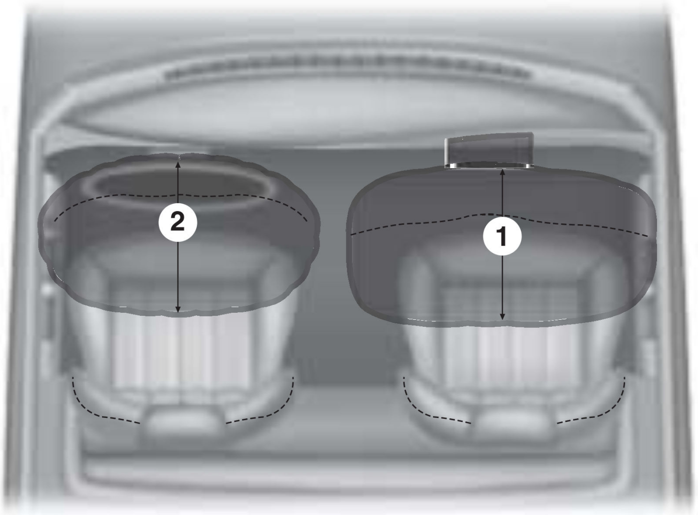
Item	Description Sedan	Description Utility
1	From the center of emblem. 13 inches (330 mm)	From the center of emblem. 9.5 inches (240 mm)
2	From the center of airbag door. 13.2 inches (335 mm)	From the center of airbag door. 13.8 inches (350 mm)
3	No objects should be placed between the airbags due to airbag variability. 29.5 inches (750 mm)	No objects should be placed between the airbags due to airbag variability. 28.3 inches (720 mm)

Section 5: Reference Information



N0146250

Item	Description Sedan	Description Utility
1	760 mm (29.9 in)	700 mm (27.5 in)

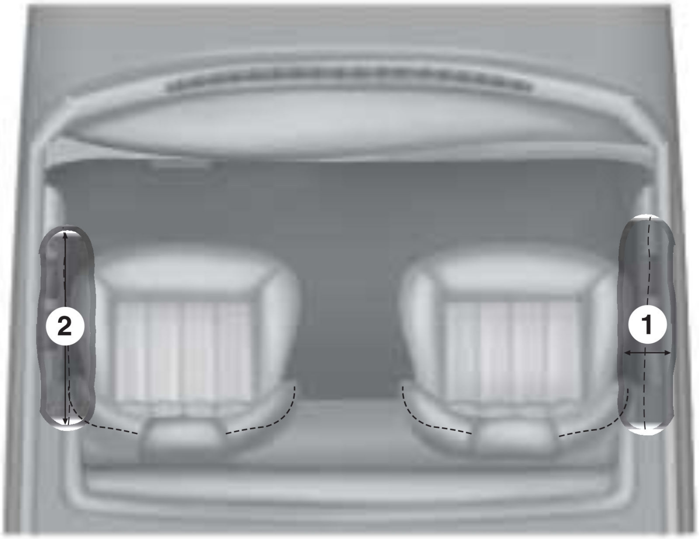


N0146351

NOTE:
No objects should be placed between the driver side steering wheel airbag and the passenger side dash airbag.

Item	Description Sedan	Description Utility
1	Front passenger airbag 27.5 inches (700 mm)	Front passenger airbag 22.8 inches (580 mm)
2	Front driver 17 inches (430 mm)	Front driver 17 inches (430 mm)

Section 5: Reference Information

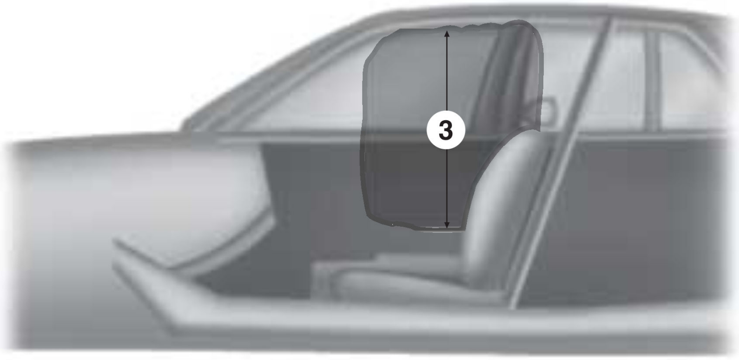


N0146352

Item	Description Sedan	Description Utility
1	From outboard side of seat 6 inches (152 mm)	From outboard side of seat 8 inches (200 mm)
2	Forward of seat back 14 inches (356 mm)	Forward of seat back 15 inches (380 mm)

⚠ **WARNING:**

The partition and the installation hardware of the partition must not interfere with the operation and deployment of the Safety Canopy® Airbag and seat side airbags. Failure to follow these instructions may cause personal injury.

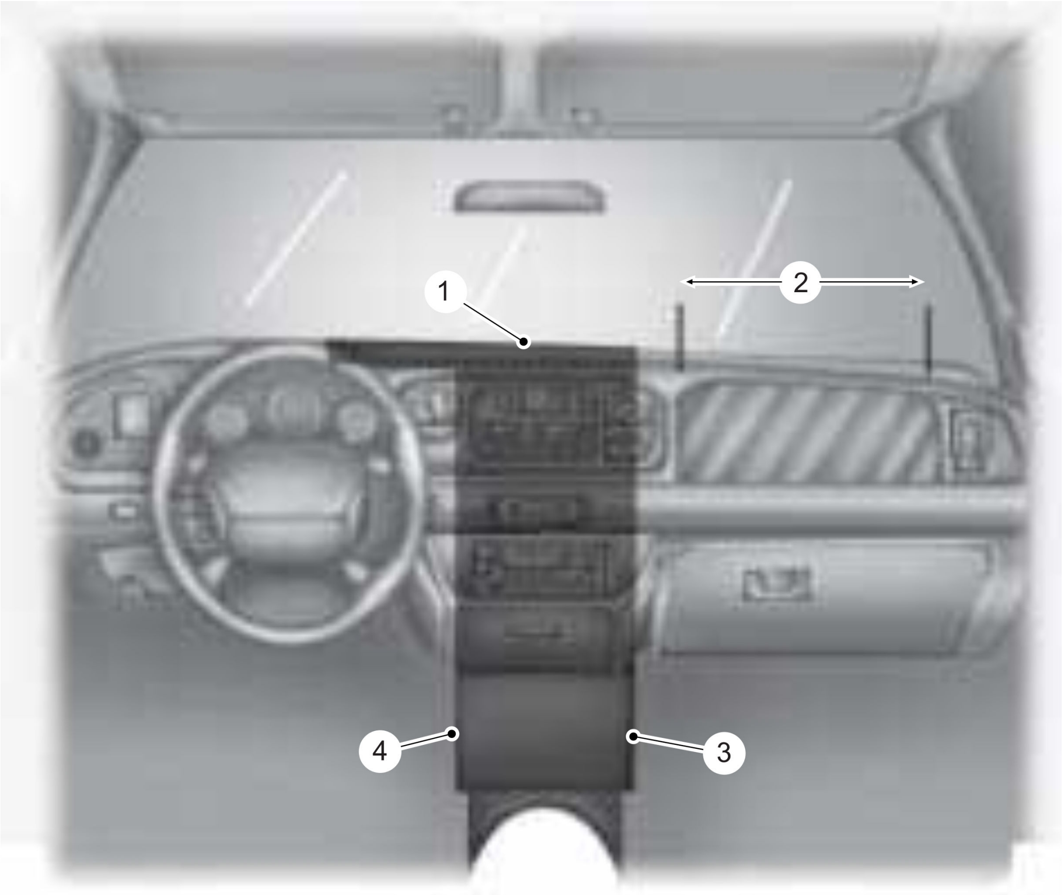


N0146353

Item	Description Sedan	Description Utility
3	Up from the side airbag module 16 inches (406 mm)	Up from the side airbag module 27.5 inches (700 mm)

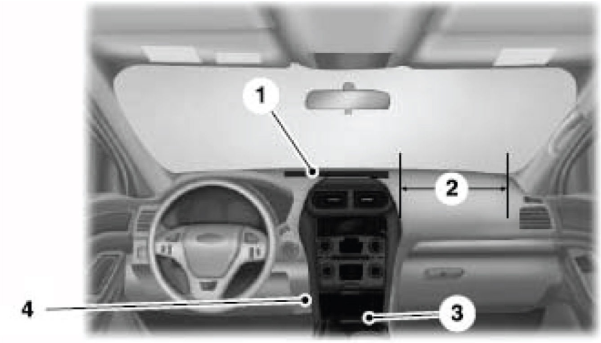
Sedan Police Interceptor

Section 5: Reference Information



N0146354

Utility Police Interceptor



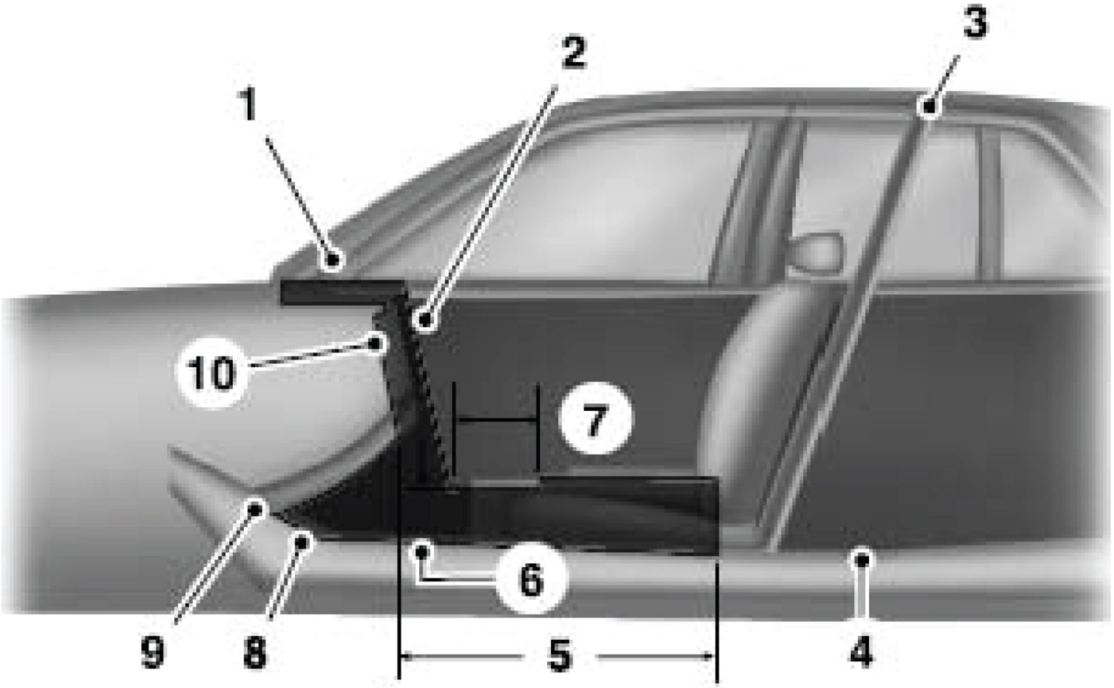
N0140484

Item	Description Sedan	Description Utility
1	Area on top of instrument panel **Equipment must not interfere with driver visibility**	Area on top of instrument panel **Equipment must not interfere with driver visibility**

Section 5: Reference Information

(Continued)

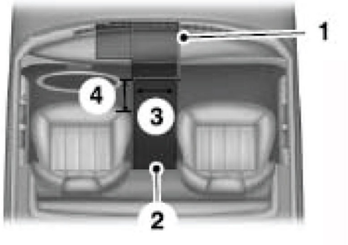
Item	Description Sedan	Description Utility
2	Airbag door must be kept clear for deployment of airbag	Airbag door must be kept clear for deployment of airbag
3	Area in front of electronic finish panel from the bottom of the ashtray to the top of the instrument panel	Area in front of the center console from bottom of ashtray to top of the instrument panel
4	—	Area in front of the electronic finish panel from the bottom to the top of the instrument panel



N0140485

Item	Description
1	Area on top of instrument panel
2	Area in front of center console from tunnel to instrument panel
3	Prisoner screen
4	10 inches (254 mm)
5	Area on tunnel between seats
6	Height: 8.5 inches (216 mm)
7	12 inches (305 mm)
8	Area on tunnel beneath center console
9	Tunnel
10	Depth: 1.5 inches (38 mm)

Section 5: Reference Information

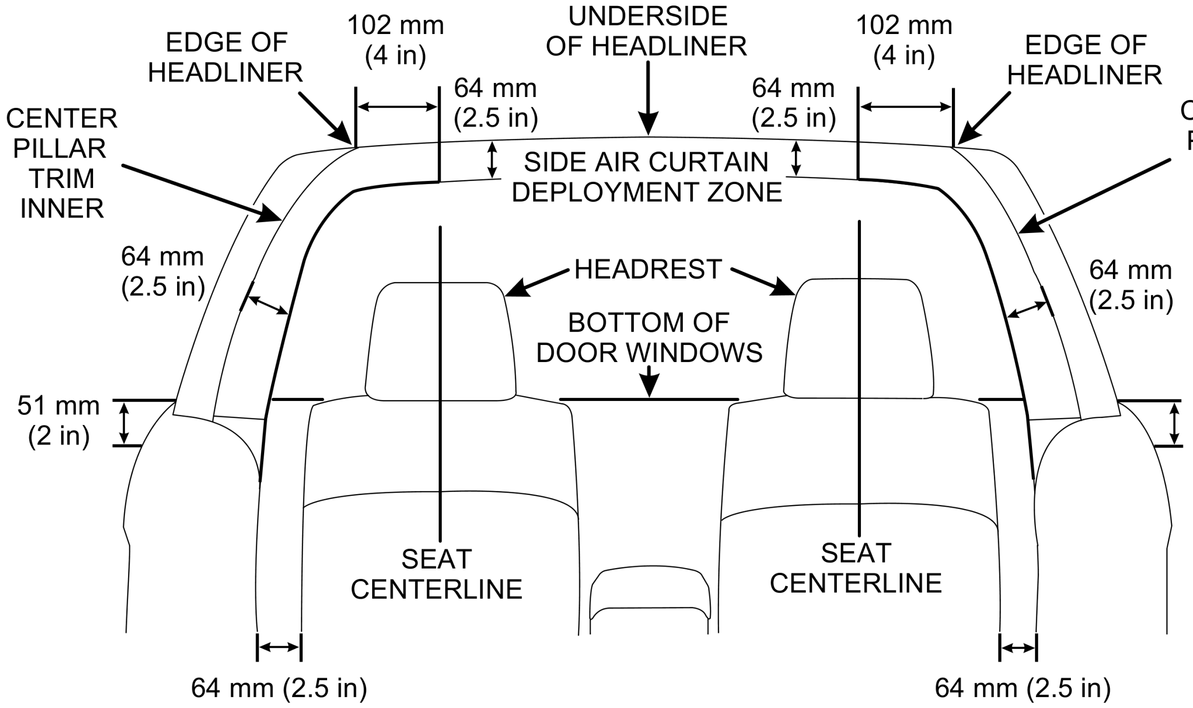


N0140487

Item	Description
1	Area on top of instrument panel. **Equipment must not interfere with driver visibility**
2	Area on tunnel between seats
3	229 mm (9 in)

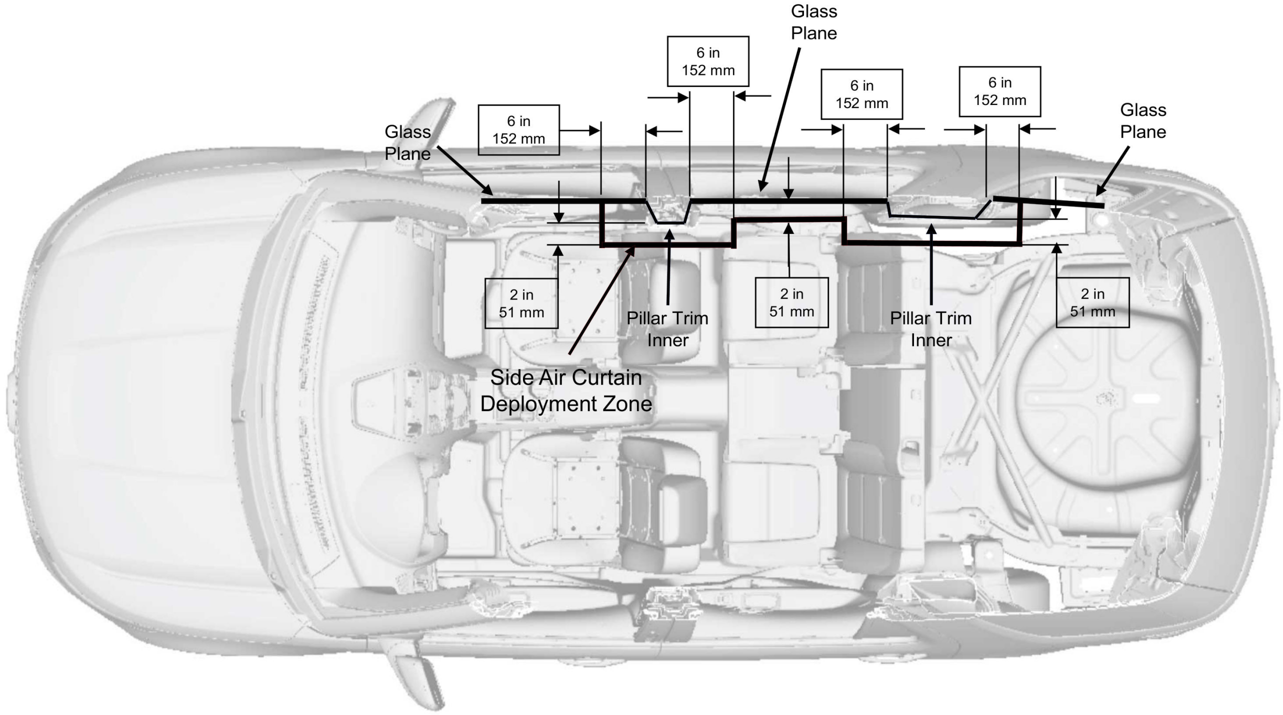
Air Curtain Deployment Zones

CURTAIN AIRBAG DEPLOYMENT ZONE


102 mm (4 in)
UNDERSIDE OF HEADLINER
102 mm (4 in)
EDGE OF HEADLINER
EDGE OF HEADLINER
64 mm (2.5 in)
64 mm (2.5 in)
CENTER PILLAR TRIM INNER
CENTER PILLAR TRIM INNER
SIDE AIR CURTAIN DEPLOYMENT ZONE
64 mm (2.5 in)
HEADREST
64 mm (2.5 in)
BOTTOM OF DOOR WINDOWS
51 mm (2 in)
51 mm (2 in)
SEAT CENTERLINE
SEAT CENTERLINE
64 mm (2.5 in)
64 mm (2.5 in)

N0146301

Section 5: Reference Information


Glass Plane
6 in 152 mm
6 in 152 mm
6 in 152 mm
6 in 152 mm
Glass Plane
Glass Plane
2 in 51 mm
Pillar Trim Inner
2 in 51 mm
Pillar Trim Inner
2 in 51 mm
Side Air Curtain Deployment Zone

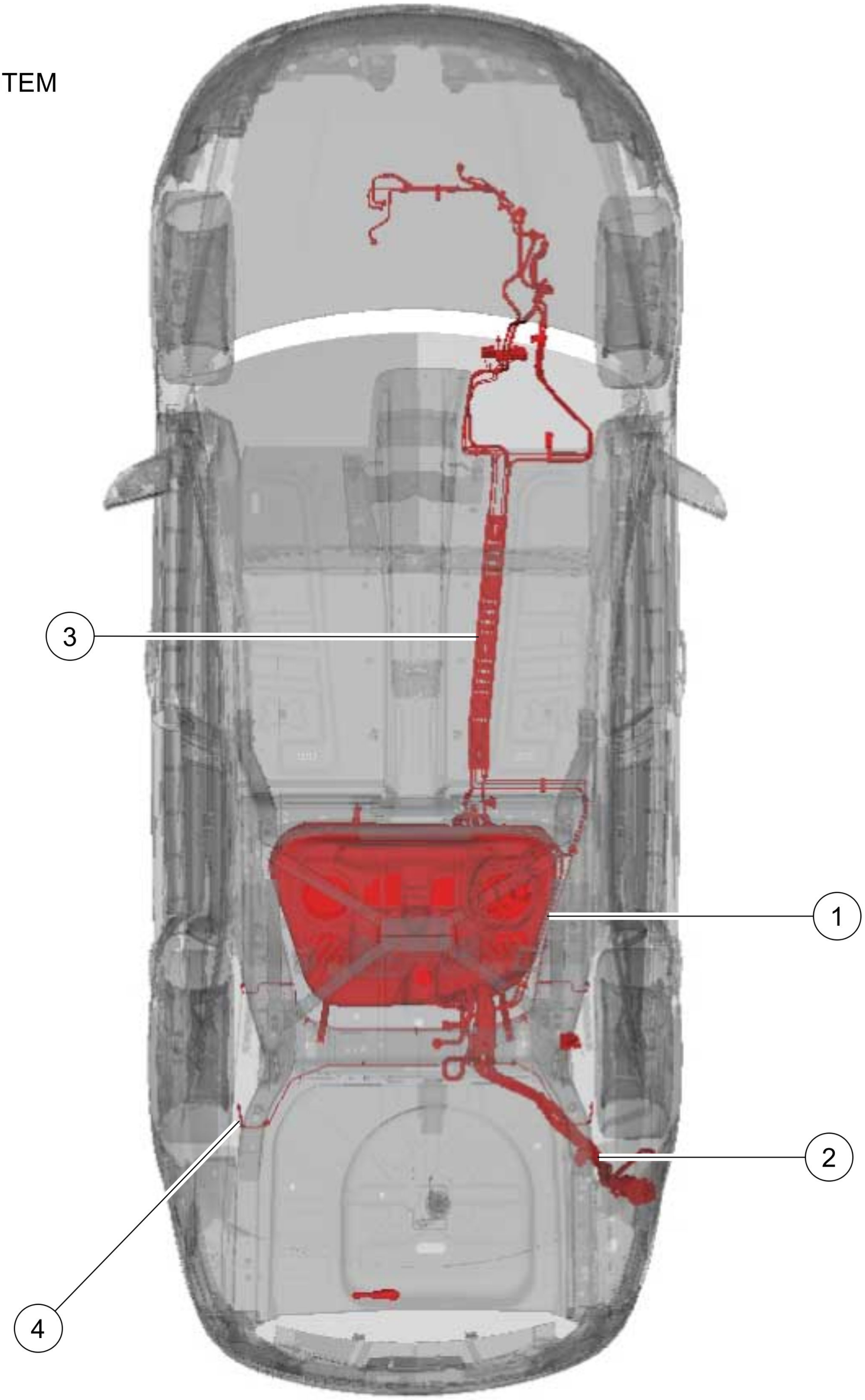
N0146530

Under Vehicle Components

Sedan

Section 5: Reference Information

FUEL SYSTEM



N0146458

Item	Description
1	Fuel Tank

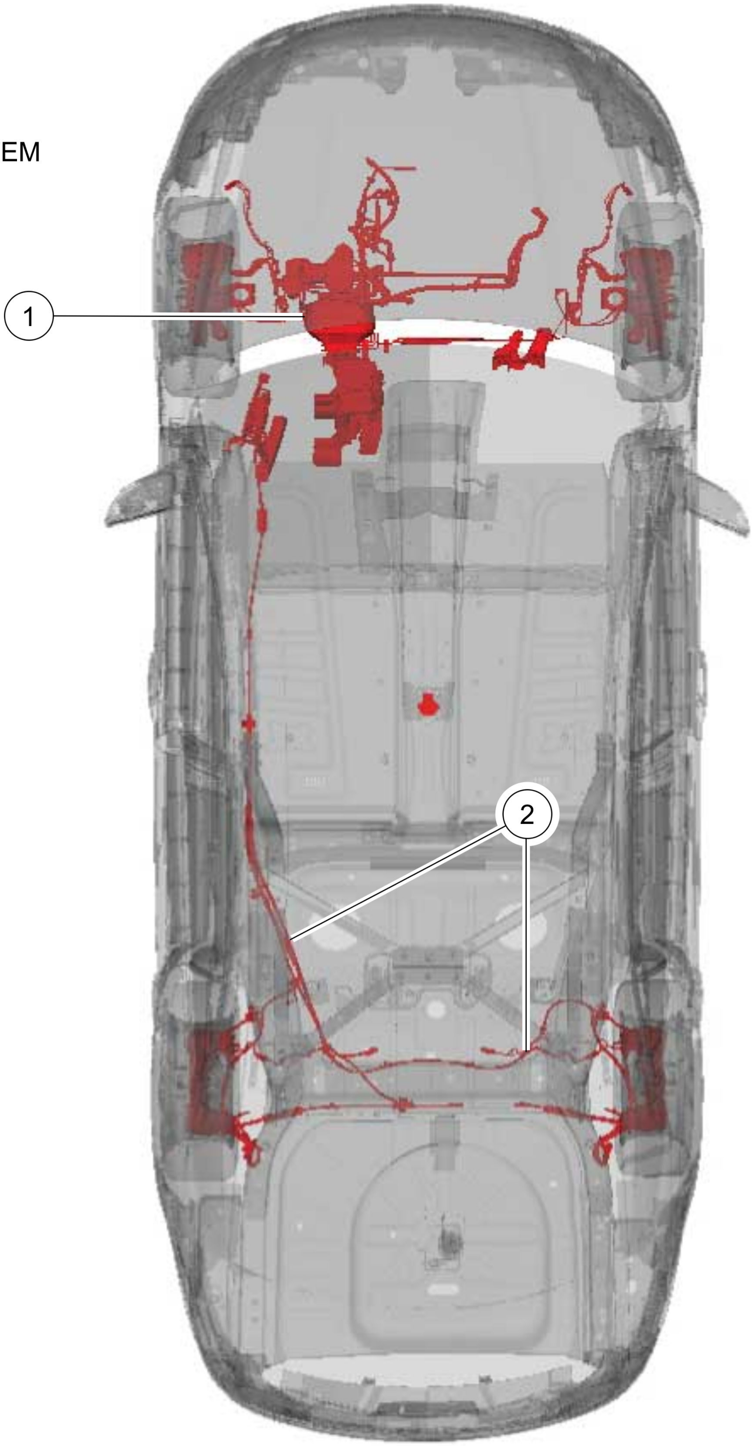
Section 5: Reference Information

(Continued)

Item	Description
2	Fuel Fill Pipe
3	Fuel Lines/Brake Lines
4	Brake Lines

Section 5: Reference Information

BRAKE SYSTEM



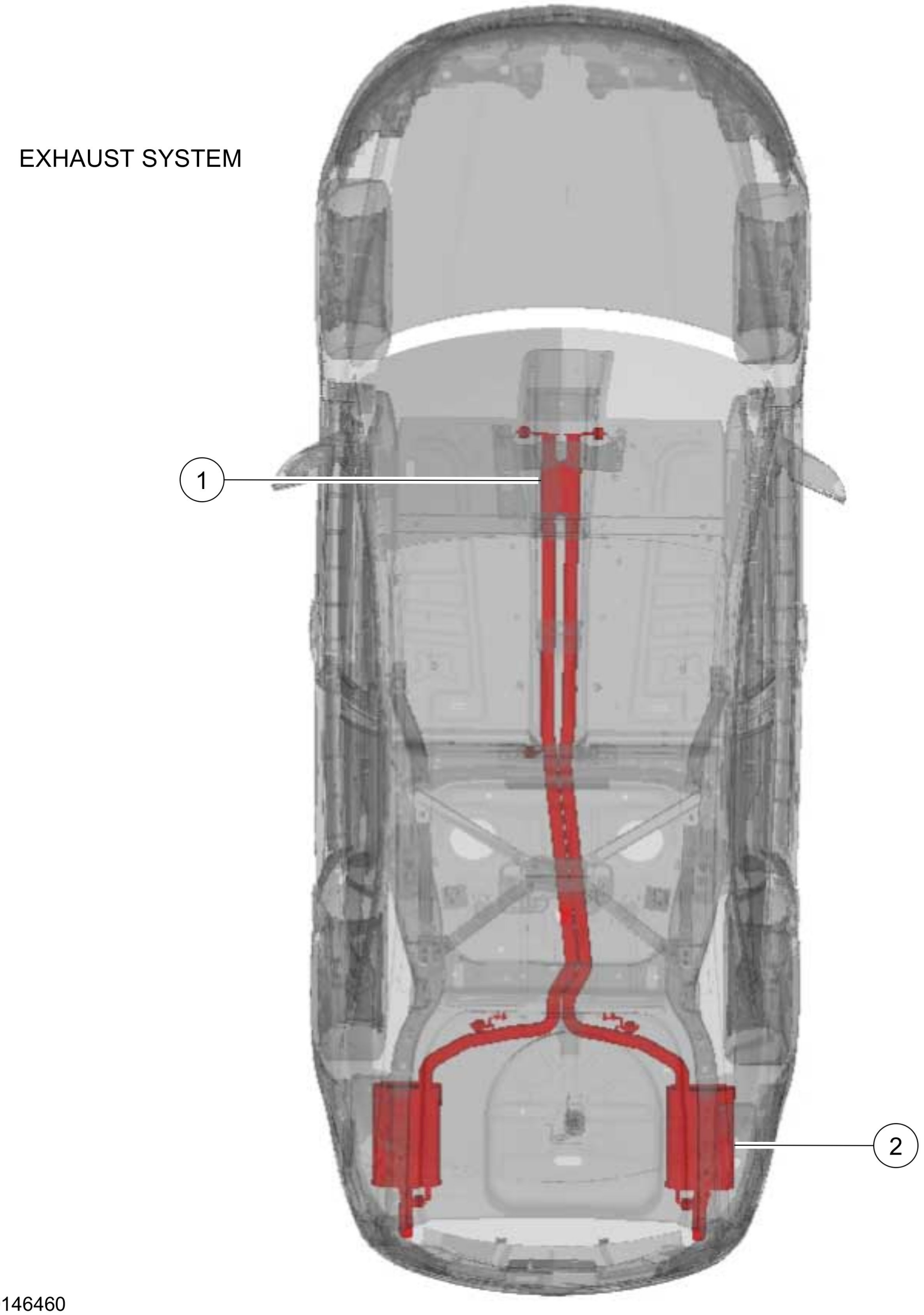
N0146459

Item	Description
1	Brake Master Cylinder

Section 5: Reference Information

(Continued)

Item	Description
2	Park Brake Cable



N0146460

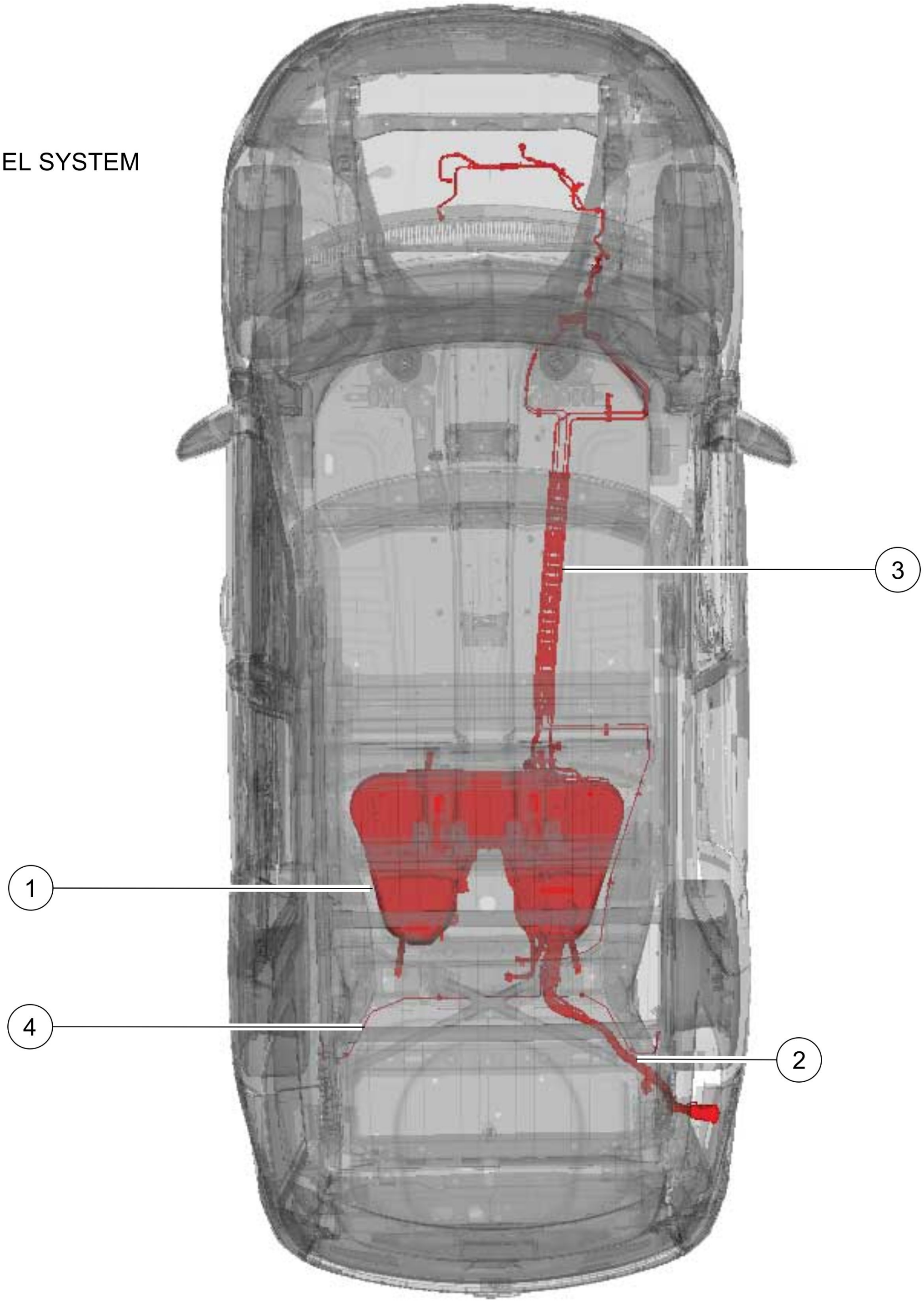
Section 5: Reference Information

Item	Description
1	Catalytic Converter
2	Muffler

Utility

Section 5: Reference Information

FUEL SYSTEM



N0146461

Item	Description
1	Fuel Tank

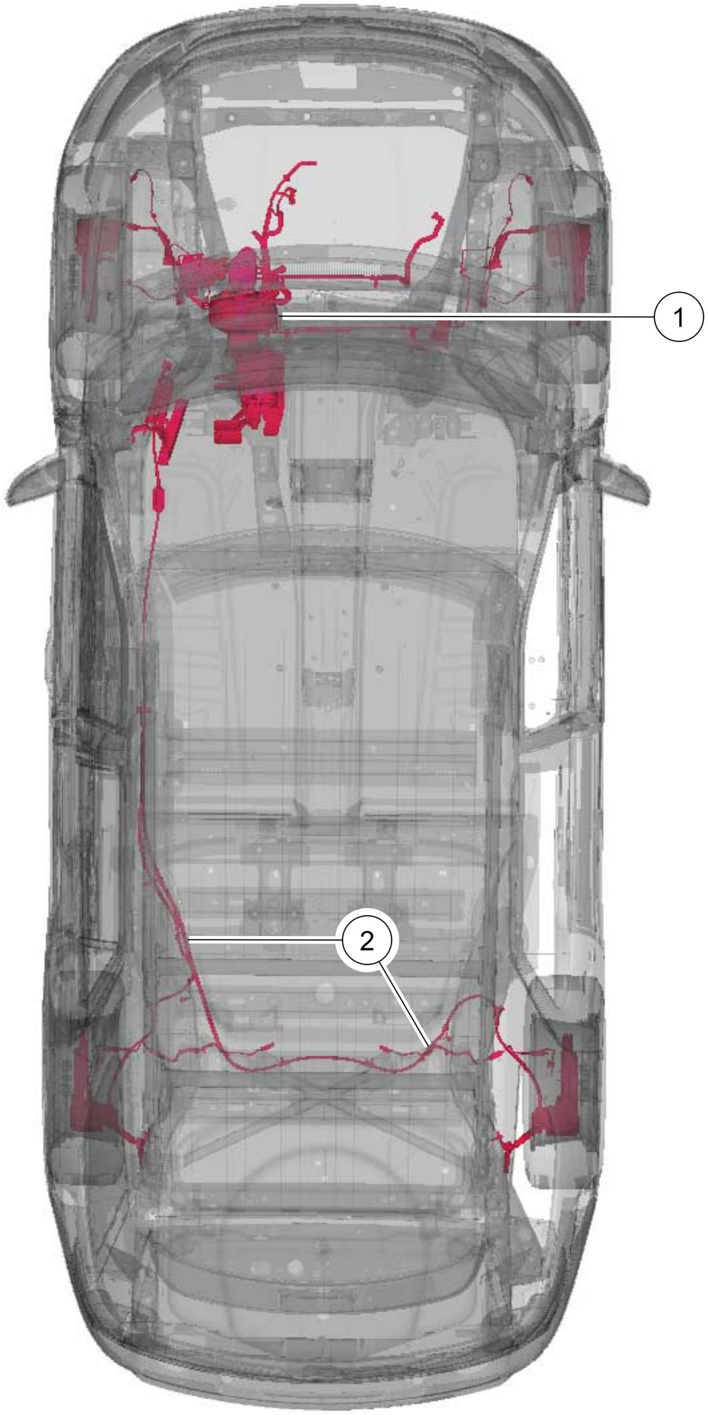
Section 5: Reference Information

(Continued)

Item	Description
2	Fuel Fill Pipe
3	Fuel Lines/Brake Lines
4	Brake Lines

Section 5: Reference Information

BRAKE SYSTEM



N0146462

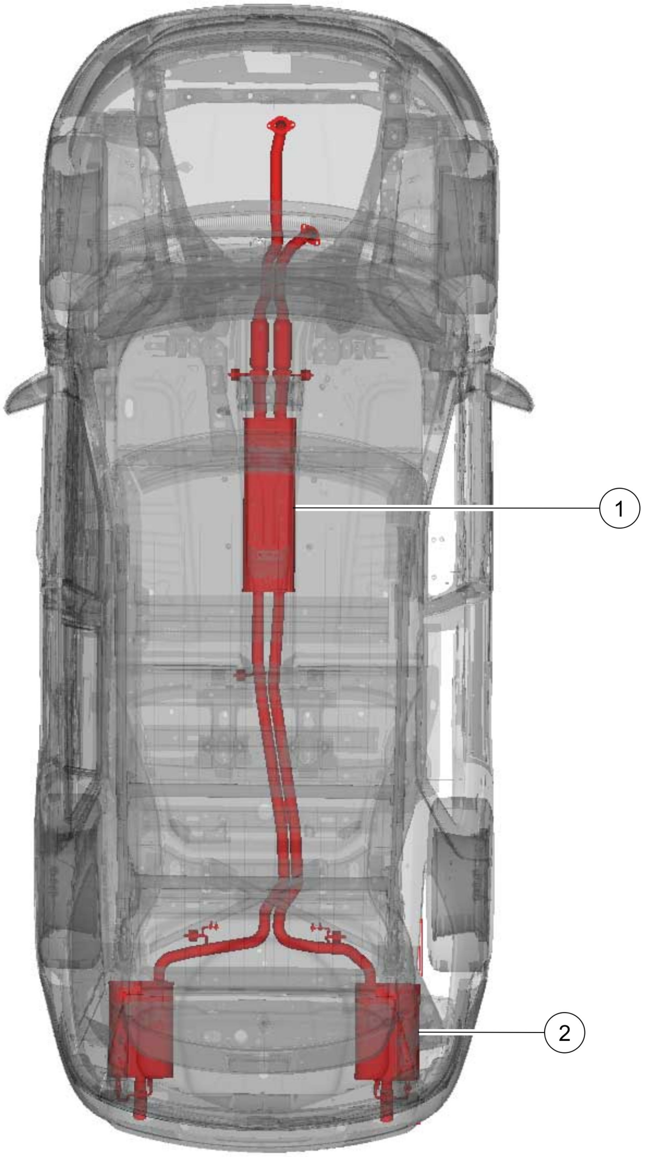
Item	Description
1	Brake Master Cylinder

Section 5: Reference Information

(Continued)

Item	Description
2	Park Brake Cable

EXHAUST SYSTEM



N0146463

Item	Description
1	Catalytic Converter
2	Muffler

DISPOSAL OF AIRBAGS AND AIRBAG EQUIPPED VEHICLES (INCLUDING PRETENSIONERS)

Contact your authorized dealer as soon as possible. Airbags MUST BE disposed of by qualified personnel.

Section 5: Reference Information

SOS POST-CRASH ALERT SYSTEM

The system flashes the turn signal lamps and sounds the horn (intermittently) in the event of a serious impact that deploys an airbag (front, side, side curtain or safety canopy) or the safety belt pretensioner.

The horn and laps will turn off when:

- The hazard control button is pressed or
- The vehicle runs out of power.

Fuel Pump (FP) Shut-off Feature

NOTE:
Refer to the Description and Operation, Intelligent Access with Push Button Start in Section 419-01A to review the procedures for achieving the various ignition states (ignition OFF, ignition in ACCESSORY, ignition ON and ignition START) on vehicles with this feature.

In the event of a moderate to severe collision, the vehicle is equipped with a Fuel Pump (FP) shut-off feature that is initiated by the event notification signal.

The event notification signal is a signal provided by the Restraints Control Module (RCM) to the FP control module. Signal communication between the RCM and the FP control module allows the PCM to shut-off the FP.

Should the vehicle shut off after a collision due to this feature, the vehicle may be restarted by first turning the ignition to the OFF position and then turn the ignition to the ON position. In some instances the vehicle may not start the first time and may take one additional ignition cycle.